

An unfinished temple at the Classic Maya centre of Aguateca, Guatemala

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The authors demonstrate that a temple examined at the Classic Maya site of Aguateca, Guatemala, was still in the process of construction when it was attacked and abandoned at the beginning of the ninth century AD. Study of the ruin has provided valuable information on Maya building methods and processes, as well as guidance on how unfinished buildings may be identified.

Keywords: Maya, Aguateca, unfinished temple, construction methods, collapse

Introduction

Large temple pyramids were central elements of every city of the Classic Maya (AD 250–900). The construction of temples representing the dominant ideology was probably one of the most important projects that the ruler and court officials planned and organised. Such construction projects, which brought a large number of people together under the command of the elite, were stimulants for developments in administrative organisation, occasions for reconstitutions of communities, and arenas for the imposition and negotiation of power (Mendelssohn 1974; Trigger 1990). A study of construction methods and processes therefore provides critical insights into administrative systems, the organisation of specialised labour, and the nature of power relations between the elite and non-elite.

Studies of Maya construction methods have been based mainly on observations of architectural elements of finished buildings and on experimental archaeology (Abrams 1994; Andrews 1975:72–79; Coe 1990; Erasmus 1965; Loten & Pendergast 1984; Pollock 1965). Archaeological remains from the unexpected cessation of building projects present a unique advantage by allowing archaeologists to glimpse how construction proceeded. In addition, such evidence should offer a revealing tale of how dynasties suffered sudden reversals in their political and economic fortunes.

Structure L8-8 at Aguateca, Guatemala, described here, presents a clearly demonstrable case of an unfinished temple. Its construction ramp and other features revealed in extensive excavation give us a rare window into Maya building processes, and the comparison between

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faced and unfaced sections provides reference data which help archaeologists to identify unfinished buildings at other sites. In addition, evidence from Structure L8-8 corroborates the hypothesis that Aguateca was abandoned rapidly as a result of a military attack.

Unfinished buildings in the Maya area

The identification of unfinished buildings in the Maya area has been surprisingly difficult. Maya archaeologists have reported a small number of temples which appear to lack facing stones and other elements which may be unfinished, but, they may equally be finished buildings robbed of stones by later Maya builders or post-collapse squatters. The massive Platform 5E-1, or the East Acropolis, at Tikal exhibits exposed rubble fills. Jones (1996) and Coe (1988:72) consider the alternative possibilities that it was an unfinished building and that it was a finished Early Classic acropolis dismantled of cut stones, Patrick Culbert (personal communication, 2003) favouring the latter interpretation. Structure 5D-11 in the West Plaza of Tikal was pyramidal in shape but had no superstructures on the summit and no facing stones except for a single course along the southern side (Peter Harrison, personal communication, 2003). A rich, probable royal tomb found under this building (Burial 77) contained ceramics dating to the end of the Late Classic period (Coe 1988:74; Harrison 1999:179). Although Harrison who excavated this building thinks that it was an unfinished temple, he does not dismiss the possibility that it was robbed of stones.

The lack of dressed stones over the exterior of Structure O-17 at Piedras Negras suggested to Fitzsimmons (1999) that the final construction phase of this pyramidal building was never completed. Interestingly, he found piles of rough stones in front of and on top of the building, which may have been related to construction activities (James Fitzsimmons, personal communication, 2003). At Lamanai, Graham (n.d.) detected a possible case of incomplete construction activity, although robbing of stones from existing buildings was common practice at this centre with long occupation continuing into the historic period. The Maya started to place cut stones to infill the rear doorways of the building that lay across the central stairway of Structure N10-27, the Stela Temple, which, Graham suspects, marked the beginning of a new construction phase. The doorways, however, were left only partially filled (Graham n.d.; see also Pendergast 1988).

Chase and Chase report three cases of possible unfinished monumental structures at Caracol. They found a large stockpile of stones in front of Structure A7, which appears to be associated with unfinished building effort (Chase & Chase 2003b). In the excavation of the pyramidal Structure B26, Chase and Chase (2003a) did not find retaining walls with facing stones or superstructures on the summit, which suggests to them that the final construction phase of this pyramid was never completed. Structure B71 gave an appearance of a knoll without stone facing, but excavations showed that this entire feature was human-made. Chase and Chase (2003b) present a tentative interpretation that this is an unfinished raised platform that was meant to support an acropolis complex.

According to Hammond and Tourtellot (Hammond 1999; Hammond & Tourtellot 2003), the construction of several buildings at La Milpa appears to have ceased unexpectedly. Structure 1 was a large temple pyramid with multiple phases of construction, but its final stage exhibited a featureless flat top and may have been incomplete. Structure 21, another temple pyramid,

lacked a front stairway, masonry facing, and a superstructure. It seems unlikely that these buildings were robbed of stones because there is no clear evidence of defensive walls placed in the final stage of the elite rule and squatter occupation after the dynastic collapse. Investigators also located a quarry containing piles of limestone blocks near monumental complexes, which indicates interrupted building activity. Yet more compelling evidence comes from the Southern Acropolis, where the imposing Structure 39 was modified and reserved to face south as the construction of a new courtyard complex began on its southern side. The new court, however, was apparently never completed. Its multiple terraces and platforms exhibited rubble cores. Researchers identified long rubble banks marking the intended outline of construction, but some areas within them were still natural hill slopes. A small depression found in one of these areas was a quarry, which was meant to be filled later.

In sum, although evidence of unfinished buildings in the Maya area is gradually increasing, there still remains a possibility that some of them are completed structures robbed of stones. Graham cautions that a building associated with stockpiles of stones may have been in the process of being dismantled rather than being constructed (Elizabeth Graham, personal communication, 2003). In addition, their potential information on construction processes has not been fully explored.

Excavation of Structure L8-8

Aguateca is a medium-sized Maya centre located in the tropical lowlands of western Guatemala (Figure 1). Aguateca was probably established as the twin capital of Dos Pilas around A.D. 700 by an intrusive dynasty originated from Tikal (Houston 1993). Structure L8-8 sits on the western side of the Main Plaza where numerous stone monuments are found (Figure 2). This building is the largest at Aguateca in terms of the horizontal dimensions. At the base its main portion measures 50 m in length and 35 m in width, and its front terrace and large front stairway add 12 m to its width. Its height of 6 m, however, is unimpressive,



Figure 1 Map of the Maya area with the locations of the sites mentioned in the text.

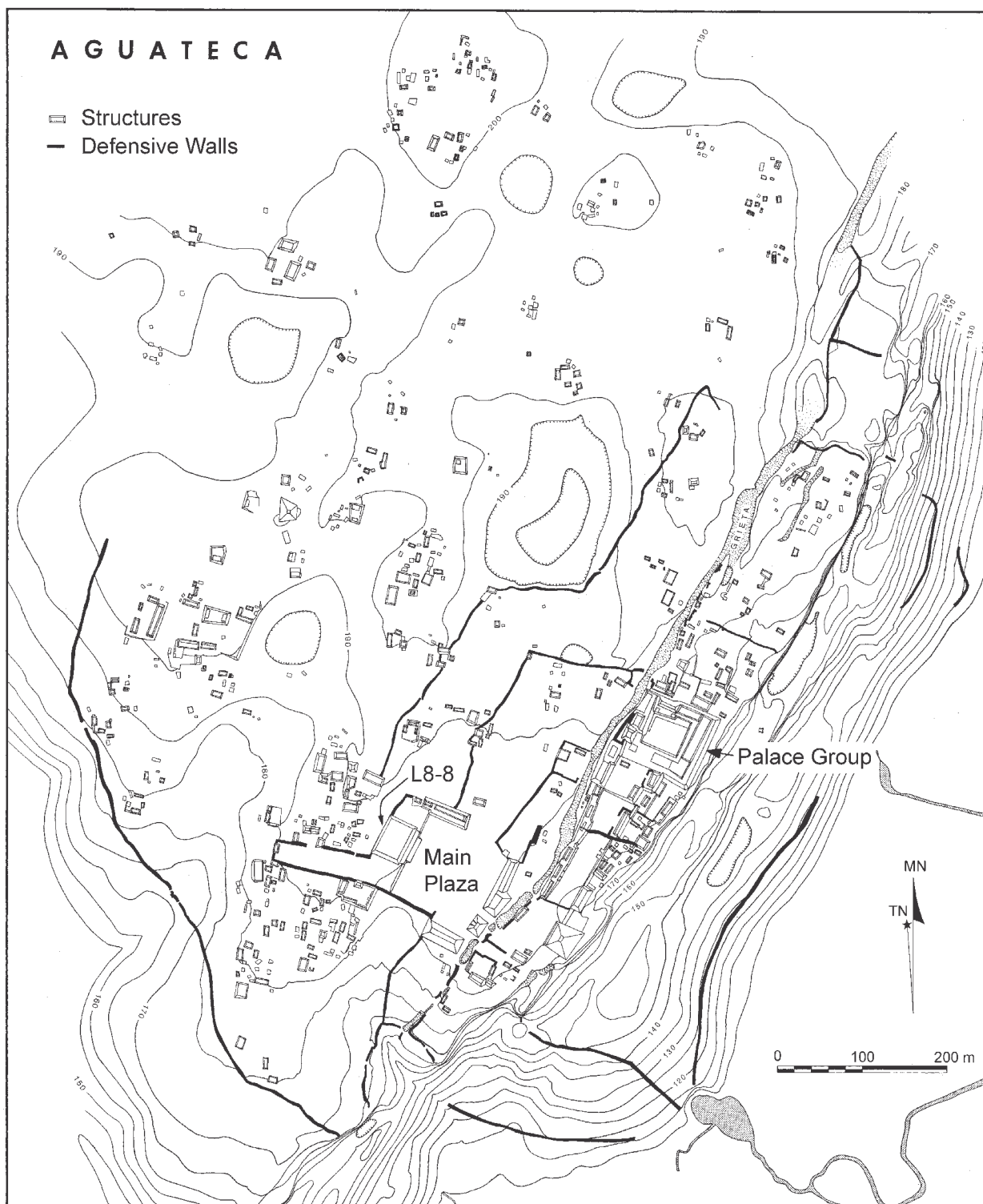


Figure 2 Map of Aguateca with the location of Structure L8-8.

giving the structure the shape of an acropolis with a broad upper surface (Figure 3). The building is made of limestone in accordance with lowland Maya custom. Aguateca is located on the thick formations of limestone, and irregular or horizontally split limestone blocks are available throughout the site. Soft limestone for dressed stones, however, appears to have been obtained at quarries located roughly 150 m to the west of Structure L8-8.

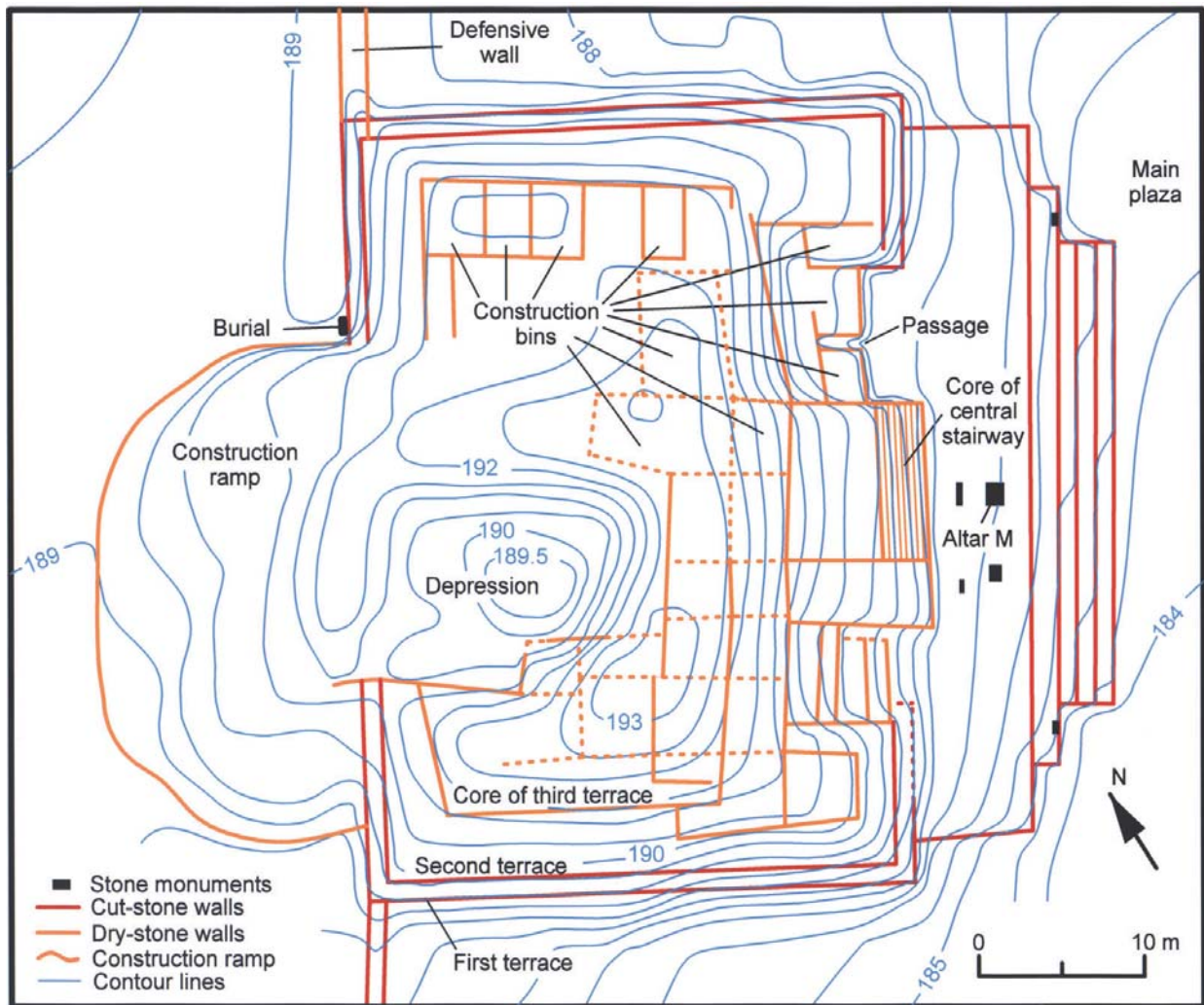


Figure 3 Map of Structure L8-8. 0.5 m interval contour line shows the topography before excavation.

The appearance of Structure L8-8 before excavation, with loose, irregular rocks, struck us as unusual. At the rear was a large pile of rough rocks sloping outward, betraying the Maya convention of rectangular or square layouts, and a large depression marked its centre. Graham (1967) and Houston (1993), who visited Aguateca in the 1960s and the 1980s respectively, recorded its strange shape. The structure also perplexed Inomata (1995) when he surveyed the site in the early 1990s. The excavation and restoration of Structure L8-8 by the Aguateca Restoration Project Second Phase in 2002 and 2003 demonstrated that the building was abandoned during the process of construction. Our project was designed primarily for architectural restoration. Thus, a large part of the building was cleared of collapsed rubbles and was subsequently consolidated and restored, but we did not place trenches penetrating into the building core.

Finished walls and exposed cores

The first and second terraces of the two sides and adjacent parts of the front and rear had been completed (Figures 4 and 5). They were faced with cut stones cemented with mortar, and fragmentary remains of plaster were preserved on the surface of some cut stones. Maya

builders were in the middle of devising a building core of rough, dry stones for the central front section and for the third terrace. The cores consisted of a series of construction bins, each measuring roughly 4 x 4 m and defined by near-vertical retaining walls, also made of irregular, dry blocks. Such bins probably contributed to the structural stability of a large building, and may have corresponded with individual work parties (Loten & Pendergast 1984).

In the centre of the front section was a stairway. Its steep lower portion was relatively well-preserved, but lacked dressed stones or mortar (Figure 6). This is probably a construction stairway or the core of a stairway, which was meant to be covered by another layer of stairs made of cut stones.

The front section south of the stairway consisted of more construction bins than the northern part. It is probable that Aguatecan architects designed this structure symmetrically like many other Maya temples. If so, builders were in the process of adding construction bins in the front section, and the southern portion had advanced more than the northern counterpart. Between some construction bins, the Maya left narrow passages (roughly 0.8 m wide) with coarse stairways (Figure 7). These facilitated access to upper sections during construction and were meant to be filled later. Once the cores were completed, builders covered them with backing masonry that consisted of mortar mixed with rubble, covered in turn with cut stones (see Loten & Pendergast 1984: Figure 4).

The quantity of artefacts recovered in the excavation of Structure L8-8 was relatively small, which was appropriate for a building that had not been formally used. Chert tools made up



Figure 4 Faced wall during excavation. Note the presence of soil and mortar used in backing masonry as well as collapsed cut stones.

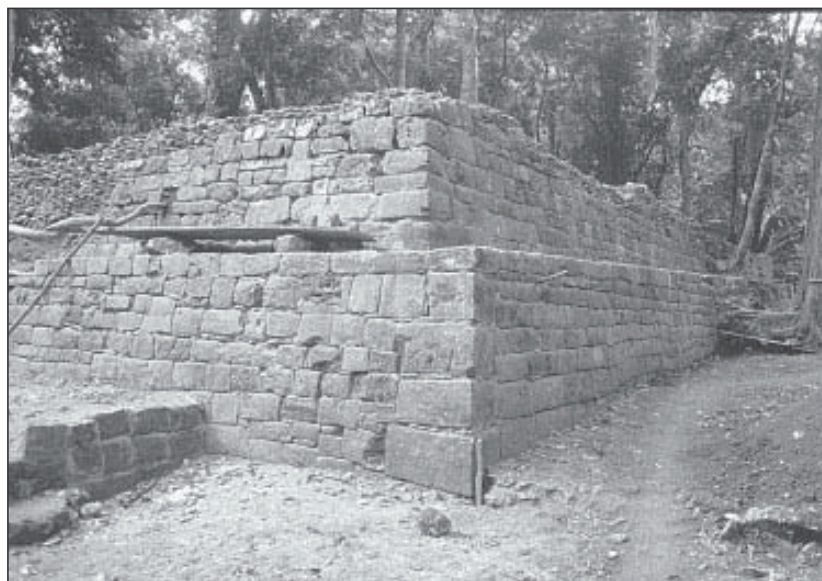


Figure 5 Faced wall after restoration (north-eastern corner of the building). Our restoration only used original stones and no new blocks were added.

a prominent artefact category, which was probably related to construction activities (Aoyama 2003). Also abundant in Structure L8-8 and in a nearby mound group were natural quartzite pebbles measuring 3 to 10 cm in diameter, many of which were shattered. Although they may have been used in construction, their function remains unclear (Buechler 2003).

It is suggestive to compare Structure L8-8 with dismantled buildings at Aguateca, including Structure M8-41 along the Causeway and the platform of Structure M7-32 in the Palace Group, and those at the nearby site of Dos Pilas, where some temples and palaces were robbed of cut stones for the construction of defensive walls (Demarest *et al.* 1997). At these buildings, the residents of Aguateca and Dos Pilas usually removed stones that could be easily dislodged and often left intact large blocks too heavy to lift and stones wedged in corners. We did not find a comparable pattern on Structure L8-8 of Aguateca. In addition, on retaining walls of the dismantled buildings one could still observe mortar and backing masonry placed over the building cores. At Structure L8-8, however, the exposed cores were virtually devoid of any traces of mortar. Given the cursory manner of removing stones observed on the destroyed buildings, it is highly unlikely that the robbers of stones thoroughly removed mortar and backing masonry as well only in the case of Structure L8-8. Ironically, these dry retaining walls of cores still stood close to their original heights in contrast to the poor preservation of finished sections in Structure L8-8 and of the dismantled buildings at Aguateca and Dos Pilas, where rain and other agents gradually eroded the mortar that served to bind dressed stones. Weathering mortar also attracted vegetation, and growing roots and falling trees



Figure 6 Northern front section of the building before excavation. Note that the stairway core and construction bins stood with little soil. A passage between construction bins is visible.



Figure 7 The passage between construction bins after restoration. Note the coarse stairs in the passage (the stairs are not restored).

further displaced building blocks. Moreover, a defensive wall abutting against the north-western corner of Structure L8-8 appears to consist entirely of irregular blocks. Unlike Dos Pilas, the residents of Aguateca initially tried to preserve the existing buildings and used natural rocks to construct most of the defensive walls (Houston 1993; Inomata 1995). The dismantling of some buildings around the Palace Group of Aguateca appears to postdate the construction of most fortifications. Thus, it is unlikely that Structure L8-8 was robbed of cut stones after its completion.



Figure 8 The intersection of the rear wall of the building (left) and the northern edge of the reconstruction ramp (right) after excavation. Note that the retaining wall of the ramp still stands in a near vertical position. Excavators revealed a burial on the solid bedrock.

Construction ramp and a depression for a tomb

The large, sloping pile of rough rocks in the rear of Structure L8-8 was most likely a construction ramp, which facilitated access to the centre and top of the building. On the northern edge, its retaining wall still stood nearly in a vertical position. The ramp slightly bent to the south to avoid a nearby residential group. The ramp was probably added after the core of the first terrace was completed. Builders then placed dressed stones over the faces of the northern and southern rear portions of the first and second terraces that were not covered by the ramp. After or during the facing of the first and second terraces, they began to construct the core of the third level on the north and south sides. The cut stones on the faces of the first and second terraces and the cores of the third terrace ended abruptly along the edges of the construction ramp (Figures 8 and 9). The masons

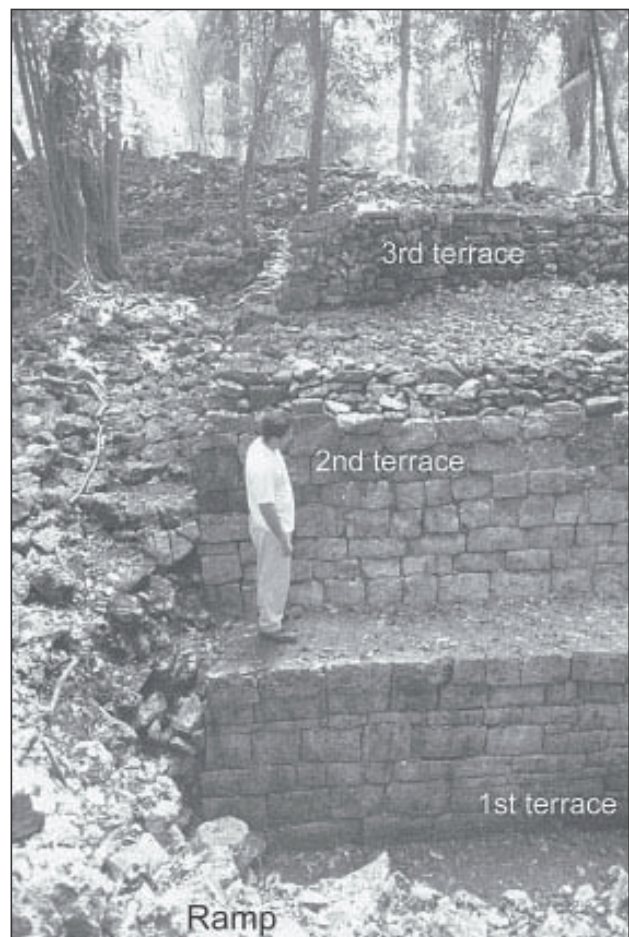


Figure 9 The southern rear section of the building after the added part of the construction ramp was removed. Note that the well-preserved retaining walls of the first and second terraces and the partially restored core of the third terrace end in a straight line along the edge of the ramp.

subsequently expanded the southern portion of the ramp, covering a portion of the faced walls of the first and second terraces (Figure 3).

Construction ramps for building activities have been identified at Caracol by Chase and Chase (Arlen Chase, personal communication, 2003). Uncovered on the northern and southern sides of the platform supporting Structures A4, A5, A6, A7, and A8, the ramps at Caracol were plastered and then buried within an outer platform. On the ramp of Structure L8-8 of Aguateca, we did not find any remains of stucco. Because our ramp consisted only of rough stones and plastered floors are relatively rare at Aguateca, we believe that this ramp was never plastered. Unlike the examples from Caracol, the ramp of Structure L8-8, was meant to be removed in a later stage of construction, and its stones were probably to be used for the core of the building. An additional function of the ramp, then, was a temporary deposit of construction material. The expansion of the ramp after the completion of sections of the first and second terraces most likely represents such temporary storage of building stones. Interestingly, we did not find any temporary deposits of construction material or debris of stone working in the front area of the building facing the Main Plaza, as well as in areas flanking the temple. By storing building material in the rear, the Aguatecans probably tried to keep these public spaces clean, although at Caracol and Piedras Negras some construction stones appear to have been piled in front of buildings.

The central depression of Structure L8-8 was not caused by recent looting. This is implied by an old tree growing inside. Nor is it likely to have resulted from ancient looting, because its size (12 m wide and 3.5 m deep) is substantially larger than other known looting holes in the Maya lowlands (Figure 10). Our excavation of this feature revealed a portion of a dry-stone retaining wall of the building core under collapsed stones. Thus, the depression appears to be part of the original design of the building, possibly for housing a royal tomb. An additional function planned for the construction ramp



Figure 10 The central depression viewed from the construction ramp. A core retaining wall is visible on the viewer's right of the person.

may have been a stage for mortuary processions and rituals. It is indicative that the central rear portion of the second and third terraces had not been built, allowing smooth connection between the depression and the construction ramp.

If this interpretation is correct, Structure L8-8 was designed as a funerary temple. In the Maya area, a tall pyramid is a common shape for a funerary building. The architects of Structure L8-8 may have planned a pyramid substantially taller than its current height, although we cannot dismiss the possibility that it was meant to be an acropolis-like shape with a flat top.

An unfinished carving

Also suggestive is a possible unfinished monument associated with Structure L8-8. Graham (1967) had recorded part of this stone sculpture, Altar M, and our investigations uncovered the remaining fragments (Figure 11). The monument appears to represent the calendar date of 9 Ajaw, which may correspond to 9.19.0.0.0 in the Maya Long Count (AD 810). Although a portion of its numerical sign is severely damaged, the size of the remaining dot makes it unlikely that the number was 6 or 7. If our reading is correct, Altar M represents the latest dated monument known from Aguateca. Unlike other examples of giant Ajaw altars known from the Maya lowlands, the interior of the day sign cartouche was plain. The lower elements showed plain, square outlines instead of the expected scrolls of a day sign. Only in the lower right-hand corner did the sculptor begin to carve such a scroll.

Disruptions in monument carving in the Maya area are not always associated with the abandonment of a centre, as in the case of Hieroglyphic Stairway 2 of Dos Pilas (Houston 1993:83). Yet, there do exist stone sculptures that were left unfinished with the demise of a dynasty, like Altar L of Copan (Fash 2001:177). Altar M of Aguateca most likely belongs to the latter category because of its late date and its association with an unfinished temple.

The fall of Aguateca

The abrupt end of the construction of Structure L8-8 probably resulted from military conflict. A series of roughly concentric stone walls surrounded the central part of Aguateca. Previous



Figure 11a Photograph of Altar M

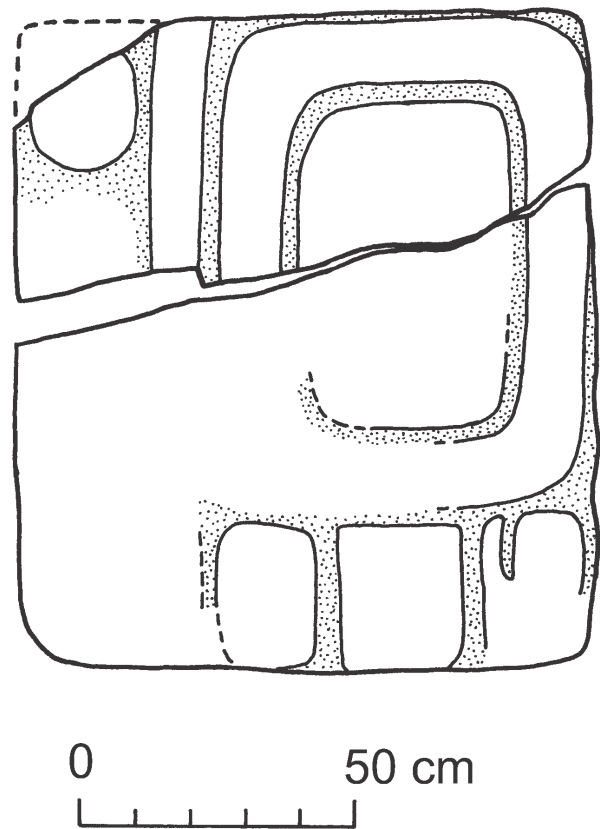


Figure 11b Drawing of Altar M

investigations had demonstrated that these walls were constructed for defensive purposes toward the end of occupation at Aguateca (Inomata 1997). In addition, their excavations in the elite residential area in the site core uncovered burned buildings containing numerous complete and reconstructed objects. The royal residential complex, however, was swept clean, and dense deposits of broken artefacts were then dumped in some areas. Only one sealed room in a royal residence contained numerous complete and reconstructible objects (Inomata *et al.* 2003; Inomata & Stiver 1998; Inomata *et al.* 2002).

These results suggest the following sequence of events at the end of Aguateca. The last ruler of Aguateca, Tan Te' K'inich, may have ordered the construction of Structure L8-8 as his final resting place. Inter-group conflict in the region, however, escalated toward the end of the Classic period, and the residents of Aguateca tried to defend the centre by building a series of defensive walls hastily. The construction of the funerary temple may have ceased at this time. As the situation became worse, Tan Te' K'inich and his family probably evacuated the centre, emptying most rooms of the royal palace and leaving some of the royal possessions in a sealed storage room. Many other elites remained at Aguateca to the bitter end. The enemy eventually invaded Aguateca and burned its central part. The remaining elite residents fled or were taken away, leaving most of their belongings behind. The enemy also burned the royal palace and ritually deposited broken objects. They forced the non-elite residents to leave the city, and Aguateca was completely deserted (Inomata 2003). The abundance of objects associated with traditional courtly activities in the burned elite residences (Inomata, *et al.* 2001) suggests that the whole sequence of events took place in a relatively short period of time. Aguateca may have been attacked and abandoned around AD 810, a date that Altar M was meant to commemorate.

The violent nature of the end of Aguateca can also be inferred from a skeleton placed against the rear wall of Structure L8-8 (Burial 15). The body lay in a flexed position on the solid bedrock, which served as an exterior floor (Figure 3). The skeleton, without any offerings, was covered only by three cut stones, and possibly by some soil or organic materials. Although stones collapsed from the rear wall of the temple fragmented the bones badly, they were clearly articulated, indicating that this was a primary burial (Wright 2003). Yet, this arrangement is highly unusual. Placed on the floor level and covered only in a cursory manner, the body decaying in the tropical heat must have emitted a strong, even unbearable odour. It is difficult to imagine that people continued to live in this area. This individual may have been a casualty of the final attack on Aguateca, who received hasty burial before the surviving Aguatecans and intruders departed. Although there might have been more bodies left exposed, such remains would have been quickly disturbed by animals and obliterated by tropical rain. A cranium was uncovered near the northern wall of Structure L8-8, and a partial skeleton was recovered near the western edge of the ramp (Wright 2003). These fragmentary human remains may represent such disturbed bodies.

At many Maya centres non-elite squatters lingered on after the dynastic collapse. At Aguateca, however, we have not found any evidence of squatter occupations. Despite the presence of numerous, still usable items, such as greenstone ornaments and grinding stones made of imported stones, burned elite residences do not appear to have been scavenged. These data suggested to Inomata (2003) that Aguateca was abandoned essentially at once, probably through coercion by the victorious enemy. The discovery of cursory burials around Structure L8-8 further supports this interpretation.

Conclusions

In the construction of Structure L8-8 at Aguateca, the placement of dressed stones in lower sections and the building of the cores of upper levels proceeded simultaneously. The completion of sections of lower terraces probably ensured structural stability before much of the upper level was shaped. It is also possible that construction labour was organised into different groups of specialists, such as labourers carrying rocks for the core, stone cutters quarrying blocks for dressed stones, masons or plaster workers setting facing stones with mortar (see Andrews & Rovner 1973), and stone sculptors carving a monument, all of whom worked side-by-side. Elite architects or supervisors most likely co-ordinated the tasks of various workers. Maya builders maintained the front area of the building facing a plaza relatively clean, and a temporary construction ramp in the rear not only provided access to an upper level but also served as a deposit of construction materials.

Our data on the drastic end of Aguateca lend support to the hypothesis that intensified warfare played a critical role in the Classic Maya collapse, in which many southern lowland Maya centres were abandoned (Demarest 1997). Although inter-group conflict may have been a symptom, rather than a fundamental cause, of the social upheaval affected by such factors as climate changes and environmental degradation (e.g., Hodell *et al.* 2001), warfare certainly aggravated and accelerated social problems.

It is still not clear whether unfinished buildings are common or rare features at a Classic Maya site. If such buildings are rare, they may be limited primarily to suddenly abandoned sites, such as Aguateca. The apparent abundance of unfinished buildings at Caracol might be related to the abrupt end of this centre (Chase & Chase 2000). Likewise, La Milpa appears to have suffered a sudden collapse in the middle of a construction boom under the direction of the central elite, although its abandonment was not rapid enough to leave numerous *in situ* objects (Hammond & Tourtellot 2003). If unfinished temples are common, the small number of reported cases reflects difficulty in identifying them. Data from Structure L8-8 tell us that a useful clue in distinguishing unfinished buildings from completed structures robbed of stones is the absence of mortar over exposed cores. Well-preserved retaining walls of cores may also help archaeologists to identify unfinished buildings before excavation. In the case of buildings that have solid cores mixed with soil or mortar, however, such a distinction may be more difficult. Further investigation into unfinished buildings should provide important information on Maya political and economic organisations, as well as insights into the social process during the Classic Maya collapse.

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