The Early Mesoamerican House

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Between 1350 and 850 B.C., the one-room, thatch-roofed, wattle-and-daub house became the most common residential structure in Mesoamerica's early villages. In addition to having served as a shelter for its occupants, such a house can serve the archeologist as a unit for analysis if he manages to isolate it from its surrounding debris, intrusive features, and the like. The variation between houses within a village can be one of our best sources of information about the variation between families—variation in subsistence, division of labor, craft activity, social status, and so on.

This section is intended as a brief sampling of the data on early houses in Mesoamerica, together with some of the ways they can be handled analytically. By attempting to restrict myself to the Early Formative (1500-850 B.C.), I hope to avoid the much greater complexity of house types that occurs from Middle Formative times on. In some regions, because of the limited available data, I have no choice but to draw on a few Middle Formative examples.

The Valley of Oaxaca

I will begin my discussion with the Valley of Oaxaca, since that is the area I know best. From Oaxaca, we have recovered the remains of perhaps 20 Early Formative dwellings in various stages of preservation (Figures 2.1-2.4). Our sample from the Middle Formative, only partially analyzed at this writing, is slightly smaller (Flannery et al. 1970).

Apparently, the first step in construction of an Early Formative house was the excavation of the floor area. Where houses were built on a level surface, this excavation was usually not more than 10 cm deep. Where houses were built on a slope, the uphill side was excavated as deeply as necessary (sometimes as much as 40 cm) in order to level the floor. The Early Formative villagers thought nothing of excavating that far even into bedrock when it was relatively soft, and then digging the postholes even deeper. Usually (but not always) the floor was dampened and stamped hard, like the "puddled adobe" technique of the American Southwest. And usually (but not always) this layer of stamped clay was given a light surface of clean and relatively fine sand. In most cases, it seems likely that this was stream-bed or river-bed sand, often including tiny rounded particles of water-worn gravel. Probably the sand kept house floors from getting muddy in the rainy season.

Such floors are easiest to recognize in profile:
Figure 2.1 House 1 in Area A at Tierras Largas, Oaxaca, before excavation. The floor area appears as a rectangle of dark organic debris in the center of the photograph.
They appear as a 1-2-cm layer of very compact clay, covered by anywhere from 2 to 10 mm of sand. Frequently the sand has in it patches of ash from cooking fires, or countless tiny reshaping or retouch flakes from flint tools made or repaired in the house. Often, the sand layer is easy to separate from the overlying earth and debris with the blade of a trowel. When one of our archeologists came down on such a sand layer from above, he was usually able to follow it to the edge of the house, where the sand gave out and the underlying stamped clay curved upward slightly, due to the excavation of the floor area by the Formative house builders. Once having discovered the edge of the house, our archeologists searched for a corner; for, once a corner has been located, one can reasonably estimate the area that must be opened up to expose the entire house.

Early Formative villagers in Oaxaca experimented with a number of different arrangements for the upright posts that supported the roof. We have detected a number of possible trends through time. In the period we call the Tierras Largas phase (1400-1150 B.C.), there was a tendency to use small posts (10-15 cm in diameter) and more of them (up to an estimated 20-25 posts per house in
some cases). This might be because these early houses developed out of still-earlier shelters (like MacNeish’s structure at Ts-381) which used multiple small “leaners.” At any rate, during the subsequent San José phase (1150-850 B.C.) there was a trend toward the use of fewer posts and larger ones (20-25 cm in diameter). The four corner posts in a San José phase house were normally the largest, and where additional posts were added for stability or to frame a doorway, they were usually smaller (15 cm or less).

It is not always possible to tell where the posts in a poorly preserved house were set; probably they were often “robbed” from an abandoned house to use elsewhere. Of course, when the post-holes are in bedrock, they are easy to recover; when set in mottled, multicolored midden, they can be tremendously elusive and ambiguous. We had our best luck when, after removing the layer of sand, we were able to scrape the clay floor and the surrounding surface with trowels, and spray both with a fine film of water from a crop sprayer (Figure 2.3). Often this is just enough to highlight the color differences between the floor and the postmolds (which may actually occur outside the “floor area”). But gopher burrows may also look like small postmolds, so each potential mold had to be cut in profile.

Sometimes the Early Formative builders outlined the house with a wall foundation of cobbles or small boulders. Sometimes they used this only along one wall, and sometimes they merely framed a corner or a posthole with stones. In a few cases, posts evidently became loose and had to be wedged with a stone, which was then left in the posthole to be discovered by the archeologist. Best of all, the post sometimes burned, leaving its carbonized base in the ground. By the San José phase, 100% of the identifiable burnt posts we recovered were of pine. Pine grows straight, and has enough resin to repel termites; this probably made it the preferred construction material in spite of the fact that, in some cases, it could be obtained only by a 20-km round trip up the mountains.

The houses just described had a rectangular ground plan, varying from 3 X 5 m to 4 X 6 m or (rarely) even 5 X 7 m in size. How the roof was constructed is unknown. A large burned daub fragment from one San José phase house (Figure 2.4) provided us with a series of pole and rope impressions; the latter suggest that horizontal roof joists were lashed to upright corner posts with rope just under a centimeter thick. Presumably the roof was thatched with grass; burned samples of reed canary grass (Phalaris sp.) indicate that this may have been one material used.

The walls of Early Formative houses in Oaxaca were built of finger-sized reeds or canes lashed together in bundles. Once again, Phalaris seems to have been used, although Phragmites is also a possibility for some of the larger canes. Over these “wattle” walls went a layer of clay “daub” which was smoothed and sometimes even burnished. Some burned fragments show that house corners were square. Although some builders were content to leave the clay surface smooth or lightly burnished, many others added a layer of limy whitewash, apparently over the entire house. This whitewash, which has sufficient lime in it to react to hydrochloric acid, often has the thickness and gloss of a pottery slip; its color varies from true white to ivory, yellowish, or pinkish white. We have not yet determined whether the difference between plain and whitewashed houses is functional (for example, between residences and cook shacks) or social (that is, between higher- or lower-status families).

Early Formative houses had a door (roughly 1 m wide) on one of the long sides. Unless this door is framed by stones, as for example in House 13 in Area A at San José Mogote (Figure 2.3), it can be difficult to find. Often, there may be no more to indicate its presence than a sunken area of very hard-packed earth, the “well-worn path” between the house and its dooryard.

During the lifetime of an Early Formative house, the occupants might make a number of modifications. Posts might be moved or replaced as they deteriorated or became loose; others might be reinforced by “leaners.” Often, because of the addi-
tion of ramadas or lean-to's, the ground surface around the house became as hard-packed as the floor. These gradual modifications over time complicate the pattern of archeological evidence in the ground, and can result in house plans that are genuinely enigmatic. House 4 at the site of Tomaltepec (Figure 2.5) can serve as an example of a residence with two superimposed floors, each virtually indistinguishable from hard-packed areas outside the house, and a series of postmolds that is undoubtedly far in excess of what the house would have had at any one time. In the words of the excavator, Michael Whalen:

House 4, an early San José phase wattle-and-daub structure reminiscent of the preceding Tierras Largas phase house construction style, is represented by a roughly rectangular arrangement of postholes associated with two superimposed packed earth floors. Although lacking the sand layers found in some contemporary structures in the region, the floors were both well preserved and well defined, consisting in each case of a thin (3 cm.) essentially flat layer of hard-packed, slightly clayey earth. The lowest of the floors rested directly on virgin soil. These surfaces, however, were not limited to the area enclosed by the wall posts. Rather, the exterior surfaces—which were virtually identical to the interior ones—clearly extend for more than a meter on the north, east, and west sides of the house, at which points they had been disturbed by later activity. On the south side, the surface extends for at least three meters beyond the wall posts. Later intrusive features precluded accurate determination of the entire exterior (unroofed) surfaced area associated with the house, but it was at least 30-35 square meters (excluding the area of the house itself). Additional postholes, suggesting lean-to's or other small associated structures, occur both inside and outside of the house, as the accompanying plan indicates.

The long axis of the house is oriented roughly east–west (79°–259°), with what may be a doorway and associated windscreen near the center of the south wall. The dimensions of the house are approximately 4.7 meters by 2.2 meters, thus enclosing some 10.3 square meters. A preliminary estimate of unroofed to roofed surfaced area of this Early Formative house, then, is at least 3:1.

Chipped stone, shell fragments, bone, burned daub, charcoal, and ceramics were recovered from the several floor surfaces, both inside and outside of the house. Two associated bell-shaped storage pits and one large cylindrical pit were also recovered on the east side of the house [Whalen 1974:2]

Having thus described a sample of Early Formative houses from the Valley of Oaxaca, let us now look briefly at the architectural data from a few early villages in other regions of Mesoamerica. Rather than attempting a comprehensive review, we have picked five widely spaced regions with contrasting environment. In spite of their differences, these regions provide examples of almost all the construction features mentioned here. Most common are pieces of burnt wall clay with reed or cane impressions on one or more sides; these have been called “cane impressions,” “wattle-and-daub chunks,” or “briquettes” (Willey et al. 1965:511). Second in frequency are reports of stamped-clay floors. Third in frequency are reports of isolated postmolds or partial lines of posts.

[Diagram of House 4 at Tomaltepec, Oaxaca, showing a complex postmold pattern which presumably results from gradual post replacement and modification during the lifetime of the house.]
The Tehuacán Valley, Puebla

Villages of the Ajalpan phase (1500-850 B.C.) and the first half of the Santa María phase (up to ca. 500 B.C.) produced burnt daub fragments similar to those from Oaxaca (MacNeish 1962). To give only one example, the small village of Las Canoas (ca. 750 B.C.) yielded 160 such "briquettes." Measurable cane impressions were between 11 and 25 mm in diameter and set very close together. Considerable grass had been mixed into the clay daub. While the Las Canoas houses generally had smoothed and burnished (but unwhitewashed) walls, at least a few houses from the neighboring site of Coatepec had lime whitewash as thick as a pottery slip. One of the Coatepec daub chunks came from a nicely squared house corner with a small area cut out of it, possibly for fitting against a corner pole or roof joist (Flannery 1964:74).

The Valley of Mexico

Recently, Tolstoy and Fish (1973) have recovered a series of partial house plans from the Early Formative village of Coapexco, located at 2600 m on the lower slopes of Mt. Ixtaccihuatl in the Valley of Mexico. Of all these houses, the largest and most elaborate was Structure 4 (Figure 2.6). Depending on certain assumptions concerning the ratio of roofed area to unroofed courtyard, Structure 4 can be estimated between 4 by 4 m and 6 by 7 m.

All in all, the area around Structure 4 yielded parts of one house, an associated paved courtyard, postmolds from a lean-to or overhang near the house entrance, and parts of a second house (Structure 5). The houses at Coapexco sometimes had foundations of fieldstone, with or without adobe lumps. In addition, some smoothed chunks of daub, presumably from walls, were covered with red specular hematite pigment.

Elsewhere in the Valley of Mexico, early architectural data are more fragmentary. At Zacatenco, Vaillant suspected the houses were of wattle and daub, owing to "the rarity of stones ... coupled with the amount of dirt in the rubbish" (Vaillant 1930:38). He uncovered an oval "oven" of tepectate slabs and wattle and daub at El Arbolillo (Vaillant 1935: 157, and Figure 6, no. XI), and it seems likely that the houses were of similar construction. By the end of the Early Formative, some buildings at the site of Zohapilco (Tlapacoya) had foundations of planoconvex adobe bricks (Christine Niederberger, personal communi-
Figure 2.6 Partial plan of Structure 4 at Coapexco, Valley of Mexico, showing floor rise, postholes, drain-like features, courtyard, and associated pits. The stippled area indicates a floor-like surface of packed mud, pumice, sand, gravel, and sherds. [After Tolstoy and Fish 1973: Figure 4.]
cation); but some of these might be from public buildings rather than ordinary residences.

The Central Depression of Chiapas

At Chiapa de Corzo during the Early and Middle Formative, houses were of wattle and daub with “well-finished adobe surfaces” (Lowe 1959:11, 73); by this, we assume Lowe refers to plastered daub rather than adobe bricks. By 500 B.C., at least some of these houses were provided with fieldstone foundations. Lowe ventures that such houses “were probably square or rectangular in outline,” though he does not state specifically whether fragments from right-angle corners were found.

The Guatemalan Pacific Coast

Middle Formative (Conchas phase) houses at La Victoria (Coe 1961:116) were archeologically represented by daub chunks with impressions of “finger-sized” canes lashed so tightly together that they touched. The walls were plastered with clay and whitewashed, but in contrast to the Puebla-Oaxaca region, the corner fragments show that house corners were rounded.

Some additional architectural evidence came from Early Formative (Cuadros phase) levels at nearby Salinas La Blanca, where three postmolds from the same house were found at one point in excavation Cut 2. Unfortunately, since Cut 2 was a classic example of “telephone booth” excavation (see Chapter 1), we know little about the house except that it had a reddish to grayish-brown clay floor with a thick layer of charcoal on the surface. Two of the postmolds were 70 cm apart in the south part of the excavation, while the third lay almost 3 m away to the northwest. Post diameters were 10-15 cm, tapering to a pointed base. The floor was slightly basin-shaped in cross-section, but it had been dug into an area already raised high above the humid surrounding plain by earlier accumulations of house clay, midden debris, and mollusk shells (Coe and Flannery 1967:Figure 6).

Pánuco, Veracruz

The Middle Formative clay house model discovered by MacNeish at Pánuco has already been described (p. 15). It is interesting that Pánuco houses, like those from the Guatemalan coast, had rounded rather than square corners. The one set of four postmolds found by MacNeish were 15-18 cm in diameter and spaced roughly 30 cm apart. In other words, the house was probably one with a large number of small posts rather than a small number of large ones.

Summary

It is difficult to summarize a subject about which so little is known. Raoul Naroll (1962) has estimated that, in villages of “Neolithic” type, an average of about 10 sq m of roofed area per person are present. If we accept this average for Mesoamerica, where early houses ran from 15-35 sq m in extent, I would have to conclude that these dwellings were intended for nuclear families.

Wattle-and-daub construction seems to have been pan-Mesoamerican, but there was considerable variety in post pattern. Houses also varied as to whether they were whitewashed or simply mud-plastered. Most houses in the Mexican highlands had square corners, while several lowland areas—from Pánuco to the Guatemalan Pacific Coast—had houses with round corners. In both cases, the door seems to have been on one of the long sides.

I have omitted any discussion of features or activity areas associated with houses. That is because there is a larger unit—the “household cluster,” to be defined by Marcus Winter later—which seems to be a more appropriate context in which to discuss both features and activity areas.

The Beginnings of Adobe Architecture

I have also omitted any discussion of adobe brick construction. So far as I can tell, on the basis
of present evidence, the first use of adobe brick probably occurred in connection with public buildings during the second half of the Early Formative. In some regions, adobe lumps or bricks were used instead of field stones to provide the foundations for wattle-and-daub houses late in the Early Formative. However, not until Middle Formative times did the use of adobe brick for residences become widespread; and even then, adobe residences coexisted with wattle-and-daub houses, perhaps suggesting that social status might be reflected in the choice of building materials.

For example, in his excavations at Moyotzingo in the Valley of Puebla, Aufermauer (1970:15) has evidence for wattle-and-daub huts as far back as 1330 BC, but no evidence for “solid adobe architecture” before 600 BC. In Oaxaca, where wattle-and-daub houses appeared between 1400 and 1300 BC, the first planoconvex (“bun-shaped”) adobes were used in public buildings between 900 and 800 BC. (Flannery et al. 1970:30).

Rectangular adobes did not appear until 500-400 BC, somewhat too late to be relevant to our discussion of Mesoamerica’s earliest villages.

At Moyotzingo, once adobe architecture appeared, there was a gradual displacement of wattle-and-daub houses from the upper slopes of the site where they had once been common. Soon only the lower slopes had wattle-and-daub residences, while the higher areas featured the solid adobe architecture that Aufermauer (1970:15) interprets as elite residences.

Eventually, even non-elite residences would come to be of adobe. A very nice example of this was recovered by William T. Sanders’ project at the Middle Formative village of Cuanalán in the Valley of Mexico (see Figure 2.7). According to Sanders:

One complete house and part of another were excavated. Both houses had hard-packed earth floors and walls constructed of irregular lumps of adobe laid in earth mortar and covered by mud plaster. The completely excavated house consisted of a single room four meters square with an earth ramp or stairway entrance on the southern side and a lean-to kitchen on the northern side. Hillside communities of this period have heavy rock debris; the fragments are similar to those used in Classic and post-Classic walls. This would suggest a pattern in Cuanalán times similar to the post-Classic and modern and related to the distribution of raw materials, with adobe houses in the plainside communities and stone houses in piedmont and hilly terrain. Similar rock debris occurs on all Formative sites in hilly areas. [Sanders 1965:94]

Cuanalán (500-400 BC) is really too late to qualify as an “early village,” but this house shows striking similarities in size (16 sq m) and shape to earlier one-room houses of wattle-and-daub construction. The meter-wide door and the localized ash deposits both inside and outside are all familiar. In addition, some houses at Tierras Largas had isolated postmolds nearby which may have been from some kind of lean-to.