From January through May, word spread around the Museum of our 'find,' and we had a constant stream of visitors to the classroom to see what was taking place. Finally, in May 1984, with our work completed, David O'Connor hosted a party for 100 Museum members and guests, highlighted by a tour of the classroom and an explanation of the work which we had accomplished during the past year. It is hoped that eventually some of this fascinating material 'discovered' in storage can be added to the present exhibit of monumental architecture from Meso-20th's palace already on display in the Lower Egyptian Gallery.

Jay Schwartz (center) talks about the pieces he and other volunteers discovered in the Museum's basement to members attending the Curators' Party in May 1984.

Jay Schwartz has always been fascinated by the ancient Egyptian culture. Three years ago he enrolled in a hieroglyphic course at the University of Pennsylvania. He then took a course in Egyptian culture with Dr. David O'Connor, followed by a visit to Egypt. He volunteered to help in the Egyptian inventory project and, after two months, was asked to join Charles Dettweiler and his crew on a weekly basis. Mr. Schwartz is a graduate of Temple University (1984) with a B.S. in accounting. After working as an accountant for a year, he decided to go into the lighting industry, in which he is still involved. He is a professional photographer and for relaxation does sculpture, painting, antique dealing and a lot of travel-ling. He has found his work at the Museum very rewarding and hopes to continue with it.

**Late Bronze Age Tylissos**

**House Plans and Cult Center**

**Barbara J. Hayden**

**Map of central Crete.**

**Introduction**

The best-known period of Cretan prehistory is the Minoan Neopalatial or Late Minoan (LM) I period, encompassing approximately one hundred years from the mid-16th century B.C. to the destruction of most of the Minoan palace centers and many towns in the mid-15th century (ca. 1500-1450 B.C.; see Fig. 2). Excavations in Crete during this century have revealed a culture which is unique, although the influence of Minoan Crete is strongly felt in the Aegean, diffused by way of trade contacts, itinerant craftsmen, and possibly limited colonization (Brandes 1981:23-34).

When the majority of Minoan palaces were destroyed in the middle of the 15th century B.C., Minoan culture did not simply disappear, but underwent a gradual transformation due primarily to Mycenaean influence from the mainland. This transition can be traced by the appearance in Crete of mainland pottery shapes, decorative motifs, tomb types, weaponry, possibly architecture, and most manifestly in the presence of the Linear B tablets. These tablets were found within the palace of Knossos, and possibly date to a destruction in the early 14th century, later than the widespread destructions about 1450 B.C. They are inscribed in a Mycenaean Greek syllabary and record palace economic activities. More importantly, they testify to Mycenaean control of the previously Minoan palace economy, whether achieved through warfare or by other means. Names of Mycenaean resident in the island occur in the Linear B tablets (Chadwick 1973: 203-205).

This transformation and gradual submergence of Minoan culture was not sudden, and various aspects of Minoan life showed a stronger resistance to change than others. The characteristics of Minoan shrines or sanctuaries, for example, continued to be built and used well into the later Iron Age (Cessell 1972: 181-88). Minoan pottery shapes and decorative motifs also demonstrate both a resistance to change and a slow evolution. During the LM II period (ca. 1450-1425-00 B.C.), for example, a type of painted pottery decoration known as the 'Palace Style' is found not only at the palace of Knossos but also at several other sites across the island: Phaistos, Kommos, Mallia, Chania, and possibly Tylissos (Pournarak 1972a: 167-68, 1972b: 78-83). The vase shapes used include large jars, and the painted decoration is ornamental and formalized. The style is derived from the LB period and continues into LM III A-I. This continuity makes it
difficult to distinguish LM II from those earlier and later periods, although a stratigraphic sequence has been found at a few sites including the southern coastal town of Kommos (Fig. 1), testifying to the existence of LM II as a period (Watrous 1981: 75–77). There is little accompanying architectural evidence because the LM II period is short and poorly documented.

The next two centuries, from 1400 to 1200 B.C., comprise the LM IIIA–IIIB periods. A few sites appear to have been continuously occupied from LM I, and for unknown reasons suffered no destruction in 1450 B.C. Many villages and towns on the east coast, such as Palaiakastro, were, however, destroyed or damaged ca. 1450 B.C., and were reoccupied sometime during the LM II or early LM IIIA period. A few settlements appear to be new foundations of the Postpalatial period. This transitional period, forming the close of the Cretan Bronze Age, is not well known because archaeologists have focused their research and excavations on the richer and more materially productive periods of Cretan prehistory, largely ignoring and sometimes even destroying evidence pertaining to the Postpalatial period. This lack of recorded evidence has hindered efforts toward a greater understanding of LM III Crete. Despite a strong degree of continuity with the previous Minoan palace period, one decided break can be detected after 1450 B.C.: a radical change occurs in the domestic architecture of the island. This break is especially evident at Tylissos, a site 7 km. west of Herakleion, on an important east-west cross-island route (Fig. 1). Large houses of LM I or Neopalatial date were replaced at Tylissos in the LM III period by structures of very simple plan, possibly indicating the presence of a new population derived from the Mycenaean Greek mainland, where house plans of similar type were in use. The appearance of the new building plans may reinforce other indications of a Mycenaean presence on the island, mentioned above.

**Late Minoan I House Plans**

One of the most individual aspects of Minoan culture is palatial and domestic architecture as manifest in the last hundred years of the Minoan palace period, the Neopalatial period (LM IA–IB, ca. 1750–1450 B.C.). At least three types of LM I house plans were in use during this period, differing from one another in size and to a certain extent, in room types, room arrangement, and building techniques. In the construction of the largest and most elaborate LM I houses or "villas," the type and arrangement of rooms and building techniques were adapted from Minoan palace architecture (McEnroe 1982: 3–13). These LM

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A system of corridors relates this area of living rooms to other rooms and stairways (Figs. 3, 4). One corridor extends east from the northwest staircase past the Minoan hall and its auxiliary rooms to staircases H and room 13, on the eastern side of the house. A possible toilet and drain were located in room 13, leading to the exterior. Corridor A in the southern part of the structure extends east-west from the western entrance past the "porter's lodge" (room 1) on its north side, to the staircase Z, which led up to private rooms on the no longer extant second floor. This corridor meets another, B, leading north past storerooms (8–10) on its west side to the Minoan hall and its associated rooms. South of corridor A is another characteristic Minoan room: the pillar crypt (room 2). This room type, with a central pillar, is often associated with cult practices; pillars sometimes are engraved with cult-related symbols, such as double axes, and a few pillar crypts contain receptacles for libations (Graham 1962: 138–140).

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**Fig. 3** LM I houses A and C at Tylissos, showing function of some of the ground floor rooms.
The LM I house A (Figs. 3, 4), directly south of C, contains the same room types: pier and door partition room (room 6), light well (room 4), accompanying sunken lustral basin or bath room 11), pillar crypt (room 3), and storage room (room 4). A corridor (A) leads south from the inset entrance of this house, framed by pillars, to the pier and door partition room and its light well. More storage rooms (10, 17) are located at the other end of the building, north of the entrance. These rooms, each with two central pillars, may have supported a dining table on the second floor, approached by the flight of stairs opposite the entrance to the structure or a small flight of stairs west of rooms 10 and 17, the latter perhaps used by servants (Graham 1962: 61). This more clearly defined division between storage/industrial and living rooms serves to distinguish house A from house C. Similar room types are evident in other elaborate Minoan houses, variation being achieved by the differing arrangement of these rooms. House B, shown in Fig. 7, is located west of house A and consists mainly of storage rooms on the preserved first floor.

The simplest type of LM I house plan is the most common, comprising 70 percent. This type has an average size of 125 sq. m. (McEnroe 1982: 10-13), with room types, arrangement, and construction techniques least influenced by Minoan palace architecture. Replacing the pier and door partition room and light well is a large room or hall; the vestibule was used for internal communication instead of the corridor. If a second story existed, a stair frequently located near the vestibule provided access to it. Walls are of mud brick with rubble foundations instead of the saw-tooth ashlar blocks frequently found in larger, more complex buildings. The LM I house Ah at Gournia (Fig. 5, no. 4), with its paved floor vestibule and mix of storage/industrial and living rooms on the first floor, is an example of this simple, common Minoan house plan. Regional differences in these simple houses are also very important in the LM I period, with certain house designs preferred within different Minoan towns (McEnroe 1982: 14).

Current evidence indicates that few of the small, simple LM I house plans were in use after 1450 B.C. (Haynes 1988: 27-31), and the elaborate house or 'villa', whose design is most clearly derived from palatial room types and arrangement, was no longer constructed.

**Postpalatial or LM III House Plans and Cult Center at Tylissos**

After Hazards's initial excavation of Tylissos revealed an important LM I town and paved cult area north of house C, no further excavation was conducted at the site until post-WW II restoration, undertaken by N. Platon, then Ephor of Antiquities in Crete. During restoration, a freestanding LM III stoa or portico was excavated immediately north of the paved cult area, and the north-south road leading to the court was repaired (see below: Fig. 7). Doorjams, thresholds, windows, staircases, and walls within the houses were restored with cement, and thresholds and doorjams were placed in their original positions (supported by iron beams). As a result, Platon was able to identify room function more specifically (room 12, for example, was identified as a filled-in lustral chamber, or bath). His investigations helped clarify problems related to
Cretan one-to-three-room buildings resemble some Mycenaean house plans of the latter part of the Late Bronze Age (Shear 1968; Darenge 1980) in the arrangement of rooms along one axis. The simplest mainland house plan consists of one room, sometimes with an interior central hearth surrounded by four columns (Fig. 5, no. 1, Malthi, LH III). Larger structures have two or three rooms arranged along one axis (Fig. 5, no. 2: Aisthe house G; no. 3: Mycenaean house M). Doors are generally placed in short walls. Main rooms are located behind porches or vestries which are one-half to one-third the length of the main chamber, and rear rooms placed behind the main chamber are of similar proportions. A more complex mainland plan, the 'megaron', consists of main chamber and porch, paralleled by one or more corridors on the long axis of the building. This corridor opens onto auxiliary rooms (Fig. 6, Tiryns small megaron; Shear 1968: 455-56). Elaborations of this axial plan with side corridor and auxiliary rooms form the core of Mycenaean palatial architecture.

There are, however, differences in size and room proportion between these Cretan buildings and contemporary mainland structures—the Cretan houses are generally smaller and rooms are usually of almost equal size. Despite these differences, the appearance of these small, simple plans may indicate the influence of mainland domestic architecture. Another possibility is that these axial buildings are an indigenous development, related to the disappearance of Minoan palace prototypes and the influence of palace architects (there are very few small, one-to-three-room buildings identifiable in the previous LM I period, however). The two alternatives need not be mutually exclusive, and both factors may be at work within this period.

A road extends north from house A to a paved court adjacent to house C (Figs. 7, 8). The rectangular altar base in the court (Fig. 9) is not Bronze Age in date, but belongs to the historical Greek period. Under the most recent pavement earlier pavements were found dating to the LM III and LM I, and Middle Minoan periods (Hazzidakis 1963:89). An incompletely published LM III stoai with seven wooden columns flanks the court on its north side (Platon 1985: 555, 562, Hayden 1983: 2–3). It provided an observation point for viewing cult-related activity in the courtyard, and is one of the few known freestanding Cretan Bronze Age stoai. This same arrangement of court, stoai, and road occurs at the complex LM III site of Agia Triada (Fig. 1), where one court is the focus of cult activity which continued into the historical Greek period (Hayden 1982: 1–2, n. 11). The continuing existence of cult is also probable at Tylissos, which adds to the importance of this site in the transitional Late Bronze Age/early Iron Age periods; the presence of the cult area may be one reason why occupation continued here after the 1450 B.C. destruction.

The last area at Tylissos where LM III construction was attested is near to and over the LM I house C, where a deeper fill protected LM III and later Greek walls (Hazzidakis 1934: 41; Platon 1985: 481–82; 1954: 506). North of the house a large circular LM III cistern was excavated; the top course of the cistern wall corresponds roughly to the floor level of an LM III structure reported over house C (Fig. 10, Hazzidakis 1934: 64–66; Kanta 1980: 1–15). Similar cisterns or circular buildings placed over springs have been identified at Aminos,Arkhanes, and Kato Zakro (Hayden 1981: 65, n. 85). The presence of this large cistern and the system of conduits leading to it indicates that the LM III settlement of Tylissos was.
may have been more extensive than is indicated by the small cult center and buildings over house A.

Later walls were built over the exterior eastern entrance to house C, forming a long corridor or approach on this side (Figs. 4, 7, area A; Hatzidakis 1934: pl. III, 1921: fig. 1). On the interior of the house, the excavator reported finding LM III rooms built over the earlier room 2 and staircase Z, and three later rooms built over the LM I rooms 9, 10/10, and II (Fig. 4, indicated in gray; Hatzidakis 1934: 35, 58, 66, pl. 33). A massive north-south LM III foundation wall with a pillar at its north end is located over room 2 (Platon 1953: 481-82; 1954: 956). The wall was placed on the LM I floor of room 2.

Moving west along corridor A, the excavator found an LM III disk-shaped column base located over the earlier LM I stairhouse Z, and the eastern wall of this staircase was embedded in a massive wall of LM III date (Hatzidakis 1934: 37). On the north side of the corridor a long LM III wall was traced, placed over the stubs of the earlier LM I walls. Two thresholds were identified in this wall, one over room 9, framed by two saw-cut limestone blocks, and a second threshold of very large size, also of saw-cut limestone, located north of the earlier stair Z (Figs. 4, 11; Hatzidakis 1934: 34-35, 36; the threshold is 2.75 m. long).

On the western side of the house, above the central room 10, a line of typical Minoan doorjams with rebates dated to the LM III period were identified on an LM III floor (Figs. 4, 12; Hatzidakis 1934: 38; described as being restored to their original position by Platon 1953: 481-82; 1954: 508; Hayden 1981: 41-45). These jambs may indicate the survival of an earlier Minoan architectural feature.

According to the excavator, Late Minoan III construction over house C was typified by larger rooms, more massive walls, and large saw-cut limestone thresholds. Fragmentary LM III walls, column bases, thresholds, and doorjams were traced to several LM III rooms built over the ruins of the earlier LM I house. On the south side of the house, for example, at least two rooms were built over the earlier room 2. Over staircase Z and room 7 another large LM III room could be identified, with central column base. A large threshold built into the north wall of this room (along the north side of the earlier corridor A) was placed between this room and the three other LM III rooms located over the earlier western rooms 9, 10/10, and II (Fig. 4; Hatzidakis 1934: 64).

**Interpretation**

These walls indicate a structure which follows, to a certain extent, the ground plan of the earlier LM II building. The key problem in dating these elements to the LM III period is the location of the second floor of the LM I structure—it is possible that some of the thresholds, doorjams, and column bases mentioned above actually were located on the second floor of the LM I house! Most of the possible LM III features are located approximately 1.5 m. above the LM I ground floor of house C, at the level of the landing between the two stair flights of the LM I structure. The level of the LM I second floor has not been established (see Graham 1962: 187-188, where the height of the second floor is given as both 1.50 and 3.00 m.; Shaw 1971: 64, n. 3, places the second floor of the LM I house at the lower level). This problem is not atypical for the period; it is the consequence of poor recording.

What can be concluded is that some of the identified LM III features do appear to be intrusive, a column base found over staircase Z, for example, and the massive, north-south wall in room 2, blocking part of the room's interior. A second floor placed only 1.5 m. above the ground floor would not be expected in an LM I house of this size and complexity (Graham 1962: 187-188). It is more probable that the LM I second floor was located at the top of the two flights of each interior staircase, about 3.0 m. above the ground floor. The LM III features are located well below this level, and this would allow for the presence of an LM III structure of considerable size, placed directly over the ruins of the LM I building and incorporating some of this structure's interior and possibly exterior walls in its plan. Tylisos could then be added to the small corpus of LM III sites where structures of considerable complexity have been found (Agia Triada, Plat, and Palaikastro).

One further problem related to Postpalatial construction over house C is the suggestion that a Mycenaean 'megaron' (plan described above; see Fig. 6) was built over the house in the LM III period (Platon 1961: 98; Alexiou 1972: 60; Halbers, Banti, Stefan 1977: 15, n. 3). The identification is based on two column bases, placed a little over 1.5 m. above the LM I ground floor level (Figs. 4, 13) in rooms 1 and 14. Platon has suggested that the columns were placed in the southwest porch of a megaron, with the main chamber extending to the west, over house C (Platon 1961: 98).

Although one example of this type of building belonging to the LM IIIB period has been found on Crete, at Gournia (Fig. 14; Hawes et al. 1959: 23; Olszewski 1923: 90-92), there is insufficient evidence at Tylisos to attest to the existence of this mainland building plan. The main chamber would actually overlap some of