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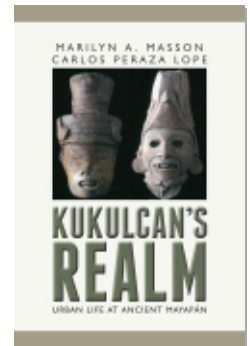
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The Urban Cityscape

Timothy S. Hare,
Marilyn A. Masson, and
Carlos Peraza Lope

New analyses of Mayapán's urban form and layout reveal principles of the organization and articulation of the city's residential and public districts. Chapter 3 addressed the activities performed at specific outlying nodes in the cityscape, and in this chapter we consider the full array of special function features that reveal differentiation and division of the settlement zone, including a market plaza and other open spaces, temples and halls outside of the epicenter, elite residences, principal wells (cenotes), and stone-marked pedestrian pathways. We argue that these features indicate degrees of formal planning and the distribution of mid-level institutions in the settlement zone. From these localities, activities were staged that linked governing elites to residents of the city's neighborhoods. Like many of its predecessors, Mayapán has been poorly credited with any degree of urban planning or administrative complexity despite rich ethnohistorical descriptions to the contrary. Given the lingering effects of characterization of the Postclassic Period as weak and decentralized compared to its Classic-era predecessors (chapter 1), it is understandable that recognizing the importance and sophistication of this city has been a slow process. As Classic Maya cities have sometimes been classified as politically and economically weak (e.g., Sanders and Webster 1988; Hendon 1991; Webster and Sanders 2001; Inomata 2001; Foias 2002), it is logical that a state considered to be devolved from the Classic would by implication be accorded even greater frailty. Opinion has been divided, however, with some clear arguments advanced for significant Classic Maya city size and complexity (Chase, Chase, and Haviland 1990:500–3, 2011; Haviland 1992:937; Folan 1992; Fry 2003; Sharer and Golden 2004:26).

Recognizing the complexity of urban organization and patterns of occupational diversity at Mayapán is an effort that runs parallel to inquiries that have targeted Classic Period kingdoms. Beyond the walled perimeter, Russell (2008a) has identified additional administrative nodes in the form of outlying temples, halls, and elite residences as well as specialized zones for agriculture, raising game, and producing lime. This chapter presents some emerging data that suggest a significant degree of organization and differentiation of Mayapán's walled settlement that structured its nucleated mazeway of thousands of houses.

The presence or absence of an orthogonal layout is not the only criterion by which urban form and the degree of planning should be evaluated and compared (M. Smith 2007, 2008). Many ancient cities can exhibit orthogonal principles within their monumental centers, even if the remainder of the residential zone is more loosely organized (M. Smith 2007:17–18). Single attributes such as population size, density, or type are also of limited utility for defining a place as urban. The functions that cities provided for their hinterlands are arguably the most important characteristic (M. Smith 2007; Hirth 2003a, 2003b). Mayapán meets Michael E. Smith's (2007) updated functional definition of urbanism as it exerted religious, political, and economic influence on its hinterland (Freidel and Sabloff 1984; Masson 2000; Rice and Rice 2009). We have discussed Mayapán's position as a political and religious center in chapter 2, and economic data for the city are provided in chapter 6. But it is at hinterland localities such as Laguna de On that the influence of a regional center is best measured, and the footprint of Mayapán's rise to power was evident in the thirteenth- to fifteenth-century prosperity of this small hamlet (Masson 2000).

On a regional scale, functional differentiation among settlements can be gauged at both horizontal and vertical scales (chapter 2; Kowalewski 1990; Crumley 1995). In the Maya area, the largest centers were diverse places of consumption and production (e.g., Becker 1973; Fry 2003; Chase et al. 2011), and smaller towns and villages tended to specialize in the surplus production of local resources, including agricultural or forest products, marine resources, chert, or clay for pottery making (Hester and Shafer 1984; McKillop 1996; Mock 1994; King 2000; Graham 2002; Scarborough, Valdez, and Dunning 2003; Fry 2003; Masson 2003b; McAnany 2004). Surplus production was undertaken alongside more generalized household economies that balanced potential risks (Dunning et al. 2003), but evidence is clear that domestic units were not autonomous in acquiring all of their raw materials and manufacturing craft goods (Masson and Freidel 2012). Exceptions are known where

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some towns focused on levels of craft production or market exchange that far exceeded the norm (Shafer and Hester 1983; Dahlin and Ardren 2002). At the market center of Chunchucmil, monumental architecture typical of Maya political capitals is absent, and this city was located in an environment that would have not permitted it to grow its own food (Dahlin and Ardren 2002). Where production took place within cities such as Tikal or Mayapán, raw material for some objects such as stone tools or shell ornaments was imported to the center, where it was converted to more valuable finished goods (Fedick 1991; Moholy-Nagy 2003; chapter 6). Variation in local and exchange economies that attests to regional functional differentiation among sites is observed within the Classic, Postclassic, and Contact Periods (Piña Chan 1978; Freidel 1978, 1981; Masson and Freidel 2012). At the smaller scale of individual sites, public spaces, monuments, and households, productive activities are also functionally differentiated, as we demonstrate in this chapter and in chapter 6.

Activities of the members of the Mayapán confederation may be reflected archaeologically by important focal architectural groups—neighborhood temples, halls, and outlying elite residences that are distributed regularly across much of the city (chapter 3, figure 4.1). Diego de Landa's (1941:62–64) account states that the lords of the confederated towns each built a residence at Mayapán. These edifices may correspond to colonnaded halls, elite residences, or both, recalling that halls for Utatlán were referred to as the houses of lineages (Carmack 1981a). Mayapán's smaller temples and outlying ceremonial groups were also likely built by members of the governing nobility (chapter 3).

Within the city, strategic facilities performed the following functions: (1) coordinate the administration of residential zones, (2) replicate features of the site's monumental zone within its residential neighborhoods to foster integration, (3) designate spaces of the city for specialized functions used by residents and visitors, and (4) direct the pedestrian traffic of residents and visitors to key nodes of activity and resources. It is important to keep in mind that functional features in the landscape, such as the city wall, cenotes, or other edges or nodes, may have had practical as well as symbolic importance (e.g., R. Fletcher 2000–2001:10; Erickson 2009:233; Russell 2013). The cohesion of socioeconomic subdivisions of Mayapán, whether spatially clustered or not, was important for achieving city unity. We envision a dialectical relationship between such subunits and the political capital as a whole. The resolution of opposing attractions of hometown identities (and other social groups) and polity scale unity would have been an ongoing priority for the governors of the confederacy. This problem was not unique to Mayapán and was often resolved by investment in inter-elite cultural interaction (e.g., Oudijk 2002; Pohl 2003b;

FIGURE 4.1. *Focal nodes and roadways that helped define Mayapán's cityscape. Map by Bradley Russell.*

Janusek 2004). Social subunits of the residential zone may have been large, representing settlers or descendants of *cahob* (hometowns) of the confederacy (chapter 2; Restall 2001), migrant groups to the city (Roys 1962), or smaller entities at the scale of isolated houselots or houselot clusters (Brown 1999). Identity politics may also have included occupational specialists such as those who lived in Mayapán's downtown crafts neighborhood (chapter 6).

The dynamic model of Maya states productively highlights the cyclic nature of centralization and decentralization (e.g., Marcus 1993; Iannone 2002). Within this long-term trajectory, the apogee of Mayapán represents an era of significant centralization in which its governors institutionally bound together potentially fractious segments within the city, across the northwest Yucatán confederacy, and among more distant allies in the Caribbean and Gulf coastal regions. Kenneth G. Hirth's (2003b) model of segmental urbanism identifies the presence of political, social, and territorial subunits of Xochicalco and its hinterlands in a way that is relevant to our examination of Mayapán. He pro-

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poses that hinterland geopolitical units (*altepetl*) within Xochicalco's domain were articulated with the center by representatives who occupied and operated key architectural facilities for administrative purposes within the city's urban landscape. Although the term *segmentary* is sometimes used to describe decentralized societies comprised of autonomous lineages (Iannone 2002; Fox 1987), it can also refer to the existence of similar, replicated units (Brown 1999). These specific meanings differ from the concept of segmental urbanism. At Xochicalco, architectural facilities of altepetl that belonged to the centralized polity represented secondary seats of authority within the urban capital that served to integrate the subunits with which they were associated—and in our view, this situation was analogous to Mayapán. While the spatial boundaries of social subunits may be difficult to identify archaeologically at Mayapán, as for many ancient cities (M. Smith 2010a; Hare and Masson 2012), ethnohistorical records explicitly describe neighborhoods or wards (Roys 1962; Piña Chan 1978). The centralization of lineages and larger corporate units at capitals like Mayapán (or Utatlán) represents a unitary state that is more than the sum of its parts—in other words, a confederated state (Blanton 1976). The problem, even at Utatlán, has been an emphasis on segmentary components rather than the clear fact of their centralization at political capital, an approach that focuses on the trees rather than the forest. Robert M. Carmack and Dwight T. Wallace (1977:109) applied the term of *segmentary-centrism* to K'ich'ean political structure to overcome the weaker implications of a segmentary model.

Territorial subunits within Mayapán's urban zone were referred to as *cuchteel* (ward or barrio). These economic and political units were officiated by a ward leader or Ah Cuch Cab (Roys 1957; Ringle and Bey 2001:271; Quezada 1993:41–42), and they have general analogs in the residential administrative divisions of central Mexico (Hirth 2003b:295; Cowgill, Altschul, and Sload 1984), highland Guatemala (Carmack 1981a), and early Colonial Yucatán (Roys 1957; Restall 2001). It is not known whether the cuchteel at Mayapán also represented social groups that shared hometown affiliations from the confederated territories, or whether they were primarily units for administrative convenience.

THE MAYAPÁN SETTLEMENT

The majority of structures in the walled (4.2 square kilometers) portion of the city were mapped by Morris R. Jones (1952, 1962) and his team. Close inspection of Jones's map, combined with our survey efforts, has revealed features that help to define portions of the city (figure 4.1). The density of settlement sets this site apart from other, earlier Maya centers. PEMY project

research (2001–2009) mapped sections of the city in greater detail using modern survey technology (figure 1.7, Hare 2008a). The great wall, with a 9.1 kilometer circumference, encloses a large portion of the site's settlement (Shook 1952:8). Parapets have been documented at some locations on the 1.5–2-meter-high ruins of the wall, which stood higher prior to the final battle at Mayapán (Shook 1952:9). Twelve ancient gates existed and seven of these (Gates G; H; D; T; a second, blocked Gate T; O; and EE) are finely constructed with porticos and columns (Shook 1952). There was probably an inner enclosure around the monumental center that ranching activities reshaped prior to twentieth-century scientific investigations (Tozzer 1941:23–26; Brown 1999). The rectangular ranch wall now encloses much of the original monumental center (figure 1.6). The Carnegie project map recorded approximately 4,100 buildings within or adjacent to the city wall—just over half of these were identified as residences (A. Smith 1962).

Mapping efforts by Clifford T. Brown (1999:149–50) and the PEMY project have uncovered more structures within groups than are recorded on the Carnegie map—including house-sized alignments that may represent additional dwellings (Hare 2008a; chapter 4). The city's settlement also expands, in lower densities, beyond the city wall to a distance of 500 meters (Russell 2008a, 2008b). As reviewed in chapter 1, Russell estimates the city's population to have been between 15,000 and 17,000 people. Many residential groups at Mayapán are enclosed by houselot walls, known locally as *albarradas* (Brown 1999; Bullard 1952, 1953, 1954; A. Smith 1962:208–9). This unusual characteristic for a Maya city is observed at some other northern sites, such as Chunchucmil (Dahlin and Ardren 2002), Dzibilchaltun (Kurjack 1974), and Cobá (L. Fletcher 1983; Fletcher and Kintz 1983). Brown (1999:78–79) expanded the study of these features to identify larger social units termed *houselot clusters*—these consist of residential groups that share dividing walls. Chapter 5 presents an updated analysis of an expanded sample of mapped albarrada residential groups at the city. These houselot walls are also relevant for this chapter's questions on site organization, as spaces between these enclosures formed lanes and guided pedestrian traffic.

Prior analyses of Mayapán's settlement characteristics have achieved no consensus. Two models, derived from ethnohistory and archaeology, characterize the city as either concentrically organized, with elite, ritual, and administrative features nucleated around the epicenter (Landa 1941:23–26), or alternatively, structured into distinct neighborhoods administered by outlying elites (D. Chase 1992). Aspects of both of these models have been verified. Elite architecture, including residences, clusters near the epicenter (A. Smith

1962:206), yet outlying halls, temples, and secondary elite homes also punctuate key points in the urban cityscape. In this respect, Mayapán is comparable to some earlier Maya cities, such as Seibal or Dzibilchaltun (Tourtellot and Sabloff 1999:74; Kurjack 1974:89). Classifications of groups with temples, halls, and oratories by Tatiana Proskouriakoff (1962a) and others (Ringle and Bey 2001; Pugh 2003; D. Chase 1992) provide archaeological support for documentary descriptions of confederacy government at Mayapán, as they represent multiple, functionally similar facilities that were likely operated by ruling families of the site's governing council.

A. Ledyard Smith (1962:265) stated that there was a "minimum of city planning at Mayapan," which he attributed to the irregular terrain. William R. Bullard, Jr. (1954:238) also concluded that Mayapán houses were scattered and not organized according to a formal city plan. Based on a statistical study of digitized portions of a subset of the Carnegie site map, Clifford Brown (1999:174–77) argues that the site's settlement was self-similar and consisted of replicated kin units on different scales. While he acknowledges that the civic-ceremonial architecture conforms to cosmological principles (Brown 1999:190, 588), the residential features are fractal, chaotic, mathematically unpredictable, and nonlinear; and evidence for wards or barrios as described in Colonial accounts is "weak" (Brown 1999:148). In summary, he argues, "The evidence for an administrative and bureaucratic type of government is virtually nil" at Mayapán (Brown 1999:585), and he views the site's political structure as segmentary and galactic.

As Michael Smith (2010b) notes, even residential zones are planned by generative, bottom-up processes by their occupants; but we are concerned here with planning principles that would have originated from elites to fulfill the needs of administering and defining the urban landscape. Following some of Michael Smith's (2007) criteria, we observe evidence for a degree of planning while refraining from typifying the entire settlement as either planned or unplanned. Planning elements can include the formality of monumental buildings constructed or arrayed according to recognizable, standardized principles (M. Smith 2007:8). Access and visibility also attest to planning principles. Mayapán's largest monumental buildings would have been visible from the city gates and would have served as landmarks for navigation. For example, in the 1950s, the site was less covered by forest and Edwin W. Shook (1952:15) was able to view the central Temple of Kukulcan from western Gate O. Outlying groups were open, and pedestrians may have had easy access to these plazas. Replicated architectural features attest to the use of standardized plans by having a limited number of orientations and parallel functions (M. Smith

2007:25, 29). These urban features were symbolic of three levels of meaning described by Michael Smith (2007:35–37), based on Amos Rapoport's (1988) classification: high level (cosmological, religious), middle level (status and other identities, monumentality, sacred space), and low level (landmarks, navigation tools, access, and other personal experiences of landscape). Timothy W. Pugh (2001) has offered an interpretation of high-level cosmological symbolism for Mayapán's epicenter that emphasizes serpent temples, a cenote/cave complex, and creation mythology involving an epic flood and crocodilian supernaturals. Such high-level cosmological symbolism can function separately from other, more mundane organizational principles of dividing the site (M. Smith 2007:30). Our facility-based approach to identify planning principles in Mayapán's settlement zone considers primarily middle-level and low-level categories of meaning.

For Postclassic- and Contact-era Maya communities, an example of high-level meaning is the conceptual division of settlements into quadripartite sectors (Coe 1965; Carmack 1977, 1981a; Fox 1987), including Mayapán (Roys 1962:37, 78). But material correlates of this principle have been difficult to recognize in residential zones, which lack clear divisions such as straight walls or roads (Brown 1999:67–73). Beyond settlement boundaries, quadripartite principles were applied to other features. For example, Prudence M. Rice (2004:279) recalls that four principal roads entered the town of Mama. At Mayapán, at least two major historical roads cross through the city's north, south, and eastern walls, and one principal road enters from the west. These were mapped by Morris Jones (1962) and Bullard (1952, 1954) and generally adhere to cardinal principles as they loosely align east-west or north-south but are off by a few degrees.

Brown (1999:67) offers a compelling suggestion that the four conceptual divisions of Mayapán may be represented by axes drawn from four major cardinal gates through the site's epicentral pyramidal structure (Q-162). Although the chronicles refer to principal cardinal gates and their named lineage head guardians (Roys 1962:79), identifying the correlates of four cardinal gates is difficult, as the city has twelve gates of differing size, elaboration, and probable significance (Shook 1952; Brown 1999:66). But major gates in cardinal positions along the wall may have had greater symbolic import.

We assume that multiple symbols of directionality may exist at Mayapán as a consequence of cumulative processes of rituals, shrine construction, and other ceremonies sponsored by a series of governing elites through time. The location of external shrines, as well as nearby temple/cenote complexes, may help with identifying quadripartite and other key features of landscape conceptualization
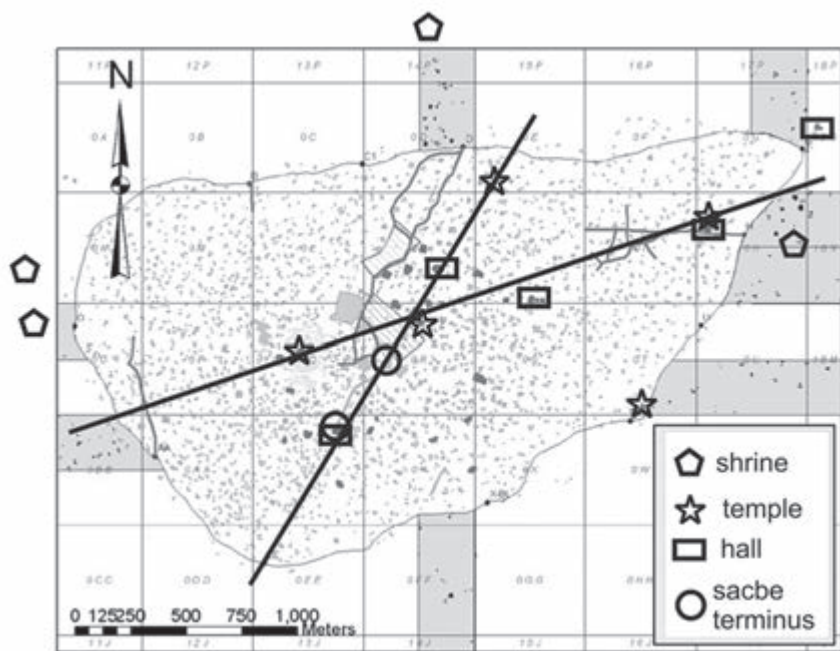
Figure 4.2. *Location of outer shrines, temples, halls, and terminal groups of the major sacbe at Mayapán. Lines indicate potentially important alignments of three or more focal features. Many more alignments of fewer features can be drawn. The only gate in the city wall included in the alignments shown here is in Square EE, at the bottom of the map. Base map of Mayapán by Bradley Russell.*

and definition. Uayeb ceremonies were particularly concerned with setting up directional shrines, or Acantun (Tozzer 1941:138n639; D. Chase 1985a, 1986; P. Rice 2004:21), but quadripartite imagery was integral to many aspects of the ancient Maya worldview (P. Rice 2004:76). Russell (2008a:657, figures 9.5–9.7) identified three shrines located in cardinal points within 300 meters of the city wall's exterior—to the east, north, and west—and he suggested that they may have been calendrical boundary markers (figure 4.2). Additional shrines may be found beyond the boundaries of Russell's 250-meter-wide transects—for example, one was found in Milpa 28a (west of the wall) that was covered with Matillas Fine Orange pottery sherds (figure 4.2; Masson, Delu, and Peraza Lope 2008:441). An outer set of ceremonial complexes is documented at a distance of 800–1,200 meters from the wall, where temple/cenote groups of

Postclassic age are present in at least three general cardinal directions (figure 2.1), including localities referred to today as Rancho San Angél (to the west), Santa Cruz (to the south), and Tichac (modern Telchaquillo). Like the smaller set of shrines closer to Mayapán's wall, these settlements and their temple/cenote groups may have been part of the symbolic regional landscape.

Key features within Mayapán's walls, including gates, elevated pathways (*sacbeob*), and monumental buildings, are aligned on axes that may have conceptually divided the city into northern and southern halves, as well as eastern and western halves (figures 4.1, 4.2). Figure 4.2 illustrates those axes that intersect with or pass near three or more features. Stone lanes formed by passageways between albarrada houselot enclosures tend to parallel these axes of key features (figure 4.1). Many more axes can be drawn among sets of three aligned features, but it is difficult to know which of these may have been significant to Mayapán's residents. Important Postclassic political centers were referred to with profound symbolic terminology, such as the "crossroads of the country" or the "navel of the world," particularly with respect to monuments integral to the 13 K'atun may cycle (P. Rice (2004:78). Unraveling the correspondence of specific sacred buildings with ceremonies corresponding to these divisions of time is difficult based on the archaeological record alone.

One primary north/northeast-to-south/southwest axis appears particularly important (figure 4.2). It extends southward from Temple E-11, near Gate D, through a number of features until it reaches Gate EE. A number of special buildings and facilities are along this axis or to its immediate west. To the south of Temple E-11 lies the open space of the city's probable central marketplace. Below this large plaza the alignment of features includes a cluster of the three most resplendent palaces at Mayapán near the only portal gate to the monumental center. The middle palace group in this cluster of palaces forms the northern terminus of the site's principal sacbe, which terminates at ceremonial group Z-50; the sacbe itself continues this axis (figures 4.1, 4.2). A nearly straight path is further traced from Z-50 southward to Gate EE. Heading toward Temple R-19b and the site's major pyramid (Q-162) from the east is another axis partly followed by a major stone lane that originates at the Itzmal Ch'en cenote near Gate H. As Bullard (1952, 1954) observed, this is the longest stone lane at the city independent of houselot enclosures, and it is also the straightest. The full details of Mayapán's pedestrian pathways are presented later in this chapter. They were important routes that connected gates, cenotes, major and minor commons spaces or market plazas, outlying architectural landmarks, and the site center. These features differentiated the urban landscape and exhibit a significant degree of planning and administration.

MAYAPÁN'S DIFFERENTIATED AND ADMINISTERED CITYSCAPE

Mayapán's organization can be envisioned as the cumulative result of settlement processes. Five processes merit special consideration: (1) initial settlement cluster formation by migrants from confederated towns, (2) governance of residential zones by officials of these towns or other appointees, (3) unequal development, (4) economic opportunities, and (5) the influence of natural and constructed facilities. The first of these processes is derived from Landa's (1941:23–26) account that supporting populations were resettled to the city to provide services. The possibility is strong that residential zones were initially composed of social segments that originated from confederated towns. Such a founding populous could have included overseers, servants, merchants, farmers, and craftspeople. Through time, links between settlement zone officials and hometown affiliations of neighborhood residents may have been diffused as the population diversified as a consequence of migration, and some residents who were born in the city may have identified more strongly with the urban capital. Ethnic enclaves have only rarely been identified in the archaeology of Mesoamerica, and in those cases, ethnic groups were from distant regions (Millon 1976; Santley et al. 1987). Mayapán's migration from within peninsular Yucatán may not have involved groups with highly distinctive material culture (Masson and Peraza Lope 2010). More work is needed to determine specific technological or stylistic attributes of Mayapán's contemporaries in Yucatán that can be used to identify such groups within the city. Subtle attributes of paste, slip, and form of east coast pottery, as defined at Cozumel (Connor 1984; Peraza Lope 1993), are useful for documenting these imports at Mayapán, but they are quite rare and not widely distributed. New sourcing data on east coast Payil Red and Navula Unslipped pottery shows some promise for distinstinguishing these materials from similar pots made at Mayapán (Cecil 2012). Gulf Coast Matillas Fine Orange pottery is distinctive and also infrequent, but its wide distribution suggests marketplace access; for this reason it is not a good ethnic marker (chapter 6). Certain decorative attributes of Pelé Polychrome, as discussed in chapter 3, may signify relationships to the Petén Lakes Kowoj Maya (Rice and Rice 2009).

Officials originally appointed to administer residential zones would logically have shared hometown affiliations with settlers brought to the city, but we do not know the degree to which such subunits were sustained through time. The longer term evolution of Mayapán's administrative strategies would have contended with the bipolar influences of polity versus hometown loyalties. We know from historical accounts that factional social identity remained strong throughout the city's history, and one manifestation of subunit cohesion

may have been close-knit neighborhoods. Despite these fractious stakeholders, the Mayapán polity remained intact for just over 250 years (chapter 2).

A third consideration that is useful for interpreting Mayapán's settlement organization is that political subunits of the confederation were of unequal strength and importance (chapter 2; Restall 2001). Likewise, there is no reason to expect that residential zones of the city were evenly developed, either due to their affiliation with leaders of varying political clout or other hierarchical processes affecting colonization and opportunities for wealth (McAnany 1995). The oldest residential zones—those originally settled—were probably affiliated with major political groups of northwest Yucatán and may have been more invested in the confederated government during times of stability. This inference is drawn from Landa's account that jurisdiction over towns and lands was divided among the lords of the confederacy "according to the antiquity of his lineage and his personal value" (Landa 1941:23–26). At other Mesoamerican cities, uneven neighborhood development is observed in terms of the presence or absence of public architecture (Mastache, Cobean, and Healan 2002:173; Cowgill, Altschul, and Sload 1984). Similarly, the western fourth of Mayapán contrasts with zones to the east, as it lacks elite or public architecture (figure 4.1).

Some neighborhoods might have been formed or filled in later due to the attractive forces of urban commerce that fostered entrepreneurial opportunities or obligatory duties. These processes represent our fourth consideration of principles contributing to settlement form. Through the 250 or so years of Mayapán's history, some residential zones would have been populated by families who did not share mutual ties to places of origin. Our primary evidence for this observation lies in the proximal juxtaposition of typical and atypical house forms, houses engaged in surplus crafting that are adjacent to houses that were not, and houses with high proportions of valuable trade goods alongside those with diminished quantities (chapters 5, 6). Although most residential zones exhibit this diversity, there is one locality where surplus crafting houses are densely clustered: Milpa 1, to the immediate west of the monumental center (chapters 5, 6). Extensive clusters of craft specialists are relatively rare at Mesoamerican sites but are known from Otumba, Teotihuacan, and Colha (T. Charlton 1994; Charlton, Nichols, and Charlton 2000; Millon 1976; Manzanilla 1996; Shafer and Hester 1983).

The influence of infrastructural elements represents a fifth consideration that influenced settlement patterns. Such facilities include marketplaces, roads, monumental buildings, gates, and water sources that would have differentiated the urban zone. Brown (2005, 2006) demonstrates the importance

of cenotes for socio-spatial identity at Mayapán, and it is probable that cenotes were significant at multiple scales, including lineage, neighborhood, larger intra-city residential units, and for the site as a whole. As Brown observes, cenotes have heterogenous attributes such as size, water, access, formation history, and the presence or absence of caves. Certain cenotes would have been more important than others for specific purposes, and the location of large cenotes and those that represented good water sources were especially important. Access roads, temple groups, and nearby gates would have enhanced their value to the city's residents at all of the levels outlined by Rapoport (1990). In the absence of clear boundary markers for settlement zones of the city, focal nodes that conjoined anthropogenic and natural resources have good potential for identifying vicinities of special importance to the city's residents. We consider it likely that these nodes served as neighborhood as well as citywide landscape markers.

In the remainder of this chapter, we review the evidence for focal features and their connectedness. Each type of focal feature is considered individually, including market spaces, outlying public architecture, and elite residences. Roads and cenotes are discussed together, as their relationship appears explicit.

Settlement Data

Three new kinds of mapping data shed light on the organization of Mayapán. The first data set is from a digitized GIS version of Morris Jones's (1962) Mayapán site map created by Timothy S. Hare. This resource permits new observations on the distribution and location of elite features in the settlement zone.

The second data set includes maps of thirty-six modern, cleared agricultural fields created by the PEMY project from 2001 to 2003 (figure 1.7; Hare 2008a). Twenty-one of these milpa fields are from within the city wall and are of greatest importance to this study. Our mapped milpa data includes many features mapped by Jones (1962), but the new information contains greater detail and is more accurate (Hare 2008a). The Jones map is useful for identifying the structures and navigating the city, but it varies widely in the accuracy of the size, number, orientation, location, and details of architectural features. The PEMY map data is supplemented with additional information collected on features and stone-lined lanes from areas outside of the mapped fields (Hare 2008a).

The third major data set is from previously unpublished maps created by Bullard (figure 4.3). We located these maps in Carnegie project archival

FIGURE 4.3 *Map of Mayapán showing areas with mapped albarradas, including those mapped by William Bullard (shaded squares), and irregular milpa sample units from the PEMY project. Map by Timothy Hare, using Bullard's archival map from Harvard's Peabody Museum.*

records at the Peabody Museum of Archaeology and Ethnology at Harvard University, and we use them here with the Peabody's permission. Bullard's (1952, 1954; A. Smith 1962:figure 1) work on documenting houselot walls and searching for stone-lined pedestrian pathways through Mayapán is well known, but the only published maps of his efforts are from Squares H and I (A. Smith 1962:figure 1). Squares H and I had the longest segments of lanes found at Mayapán, and these were viewed as atypical for the site. As it turns out, Bullard also recorded all of the albarrada walls present in Squares D/K, AA/DD, and Z/EE, which he mentioned in an early publication (Bullard 1952:36). We located his penciled recordings of these walled spaces on an early version of Jones's map in the Peabody archives. Hare (2008b) digitized this information. The twenty-two PEMY milpa localities have simi-

larly mapped data of all walled features, but the milpa sample areas are of irregular shape. In contrast, the large, contiguous areas of Bullard's 500 × 500 meter squares offer improved analytical opportunities. Bullard's data also covers areas where we have the least mapped milpa samples. His information has enabled us to reconstruct longer pedestrian pathways between houselots from major city gates toward destinations in the city's interior. There are some limitations to the Bullard data. We have less confidence in the types, dimensions, and shapes of walled areas than in our own data mapped with newer survey technologies.

Market Spaces

Mayapán's Main Plaza, defined by the quadrangular space between the site's main pyramid (Q-162, the Temple of Kukulcan) and Hall Q-81/Temple Q-80, is quite small, and an even smaller plaza exists to the north, between Q-80 and Hall Q-64. This area is too small to have served as a major market-place. Bullard's maps of houselot walls reveal a large, rectangular plaza (250 × 150 meters) in Square K, located approximately midway between Mayapán's monumental center and a major northern gate in the city wall, Gate D (figure 4.4). Other open spaces exist within the settlement zone that may represent market spaces that served nearby residential zones. These are more difficult to interpret as market spaces, as they could have served as general purpose "commons" areas that were used for a variety of purposes, including commercial activities (Dahlin et al. 2010:206). One example of an open area is near Gate H, by the Itzmal Ch'en group (figure 4.5). Other relatively empty spaces are located near city gates (e.g., Gate B) and are also within the heart of the walled settlement, as the structure density map indicates (figure 4.6). It is reasonable to infer that local neighborhood market plazas may have served nearby residents with a smaller range of goods and that the city also maintained a larger, central market plaza that hosted visiting merchants who sold more nonlocal or non-regional items to each other and citizens of the political capital. A similar nested system of market exchange has also been proposed for Tikal (Fry 2003).

The Square K plaza is different from other open spaces at Mayapán in terms of its large size, rectangular shape, and internal features (figure 4.4). This space is oriented northeast-southwest, essentially on an axis that aligns the site center to Gate D. It is devoid of houselot walls or dwellings. An extension of the Square K marketplace may be present in Square R (figure 4.6), which has no mapped houses. The combined Square K and R spaces form a large L-shape near the city's center (figure 4.6). One expectation of marketplaces

Figure 4.4. *The gray-shaded rectangular space indicates a probable marketplace in Square K. A concentration of elite and public buildings is found to the east of the plaza. Pathways between houselots are traced from this area to Gate D. Note the large platform K-42 at the north end of the marketplace. Map by Timothy Hare from Bullard's archival map, courtesy of the Peabody Museum.*
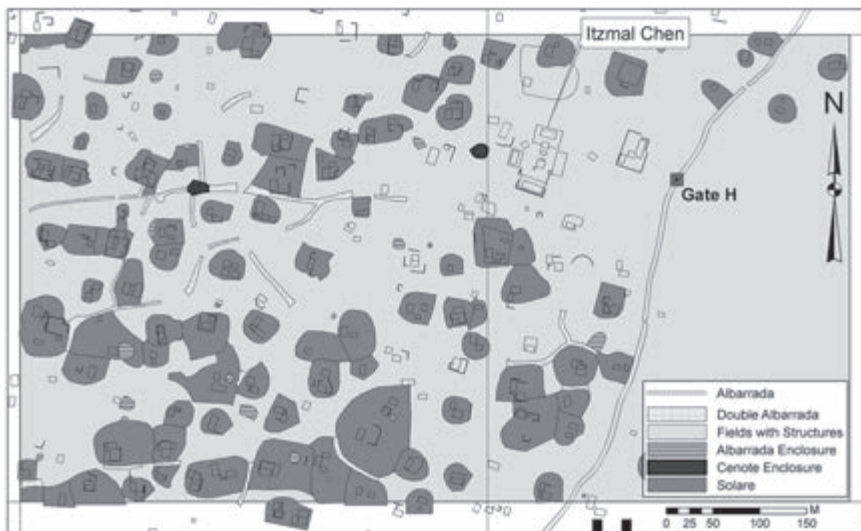
Figure 4.5. *The map illustrates an open space between the Itzmal Ch'en ceremonial group and Gate H as well as enclosed houselot spaces, enclosed field spaces, and independent stone lanes. Map by Timothy Hare from A. Smith (1962:figure 1).*

is the presence of nonresidential alignments or architecture that may have served as stall foundations or other market buildings. These types of alignments led Karl Ruppert (1943:230) to suggest a market space in the Group of One-Thousand Columns at Chichén Itzá and Tourtellot and Sabloff (1994) to propose the same for the Mirador Flats area of Sayil. Bruce H. Dahlin's recent work (Dahlin et al. 2005, 2007) identifies similar features in an ancient marketplace at Chunchucmil. Such alignments are present in the Square K plaza and have not yet been observed elsewhere at the site (figure 4.4). Smaller, more asymmetrical open spaces within the city lack evidence for nonresidential alignments.

Structures K-40, K-41, K-47, K-48, K-49, K-50, and K-105 represent examples of such alignments in the Square K plaza (figure 4.4). All of these structures (except K-49) are shown as dashed lines on the Jones map, suggesting that some of these were modifications of natural contours or that they were generally ephemeral (unlike almost all of the houses mapped at the city). The K-49 feature consists of two small bench-sized features in the center of the field. Anomalous Structure K-42 is of particular interest (figure 4.4). Located at the north edge of the plaza, this massive building faces south across the
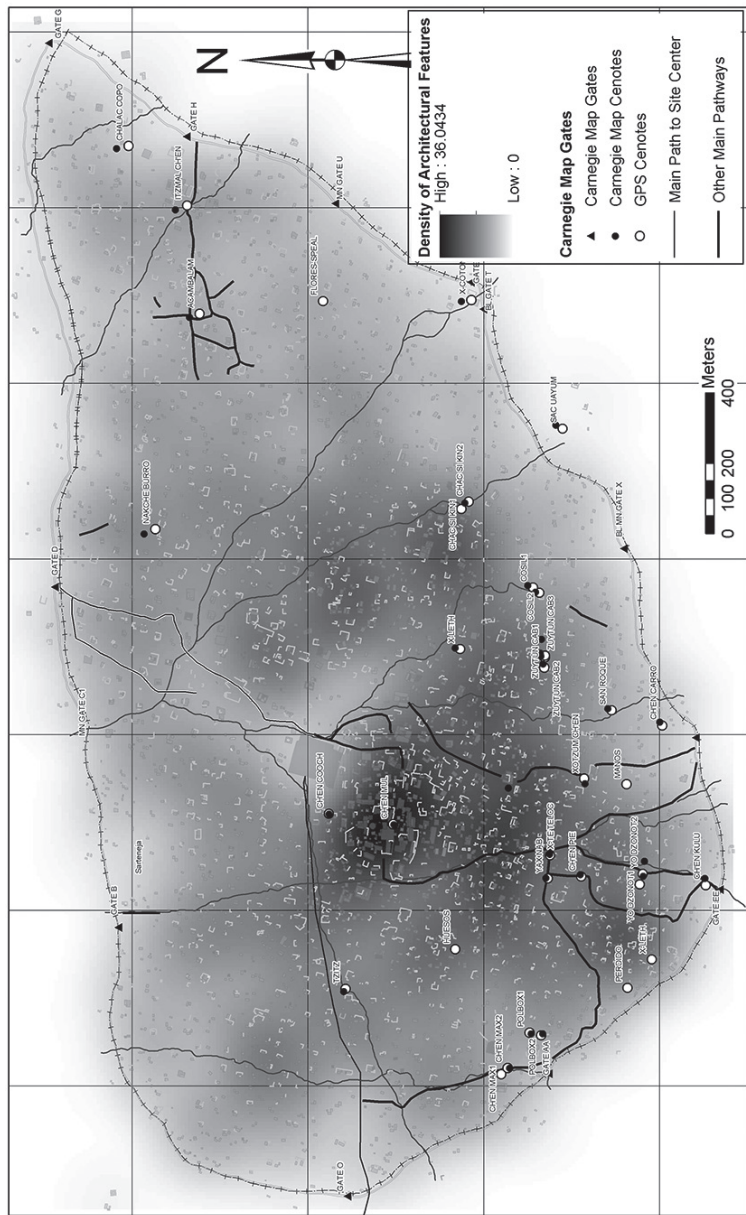
FIGURE 4.6. *The map illustrates structure density at Mayapán, cenote locations, and empty spaces, including the plaza areas in Squares K and R. Historical trails are shown in gray and known ancient stone–lined pathways, or sacbeob, are shown in black. In some cases they coincide, especially in the southern and western parts of the city. Map by Timothy Hare.*

open space and dominates the landscape of this area. It appears to be a large constructed platform over a modified hillock that rises 3–4 meters above the surrounding terrain. Its basal contour (at least 50 × 45 meters) was modified into a C-shaped platform, with a depression within the three interior sides of the building large enough to hold a truck. It has no discernable upper rooms or wall divisions. This form is unlike any other edifice at the city. The lack of surface features is also dissimilar to Mayapán's residences; all other buildings of this size have clear surface remains of upper benches and room divisions. It was clearly a central feature of the plaza, as it slopes southward toward the open space and the ground-level alignments. A small shrine is located along the western edge of the plaza (K-51). Except for the K-42 platform, the ground is low and relatively flat throughout the plaza, and all other alignment structures are without substantial elevation.

Román Piña Chan (1978:43) describes a facility for Contact Period Yucatecan towns that he refers to as a "House of Commerce" within a marketplace, where merchants brought their commodities for sale to elites. Unfortunately, he cites an early version of Landa's account, and we have been unable to locate the original passage (Rosado Escalante and Ontiveros 1938). Similar market oversight is reported, however, at the Contact Period market of Cachi, where a building at one end of the marketplace housed inspectors of weights and measures; Piña Chan (1978:40) cites Gonzalo Fernández de Oviedo y Valdés's (1853) account for this. K-42 is a possible facility for these types of market oversight. The market at Chauaca had permanent thatch roof buildings (Piña Chan 1978:43), and the alignments (and K-42) in the Square K plaza may be remnants of similar facilities. The lack of surface features at K-42, which is unique for an edifice of this size at the site, implies that it supported a large pole and thatch superstructure. The Square R plaza also has low alignment features of a range of sizes (R-63, R-64, R-114). The north end of the Square R space is marked by two parallel rows of altars aligned north to south, including R-1, R-2, and R-3 that form the western row and diminutive Structures R-7, R-5, and R-4 that form the eastern row. The rows are approximately 90 meters apart. Contact Period commercial activities were sometimes linked to religious pilgrimage shrines, and this practice was also probably true for Mayapán (Freidel 1981; Freidel and Sabloff 1984). The presence of shrines in the Square R space implies an association of ritual with potential commercial activities nearby in Square K. Near the Square K and Square R plazas, a unique concentration of elite residences and public buildings affirms the significance of this area of the city, as discussed later in this chapter.

Figure 4.7. *Location of outlying halls and temples in Mayapán's settlement zone.*

Outlying Halls and Temples

Outlying halls and temples, as well as the hall group termini of the site's principal sacbe, are distributed in striking regularity in the walled settlement zone to the east of the site center (figure 4.7). Carnegie archaeologists described four outlying ceremonial complexes, including the Itzmal Ch'en group by Gate H, the X-Coton group by Gate T, Temple E-11 (with a small sacbe) by Gate D, and a hall and oratory complex (J-109–111 group) in the east central part of the city (Proskouriakoff 1962a:127–31; A. Smith 1962:204–5). Temple R-19b, which is associated with an oratory (R-19a), should be added to this list. Like X-Coton Temple T-70, R-19b faces west while E-11 and H-17 of Itzmal Ch'en face south. Other focal nodes contain additional halls outside of the site center, including Halls K-79 and Z-50c, the southern terminus of the largest sacbe (A. Smith 1962:203, 223), as well as Hall 18-O-1, recently discovered outside the wall near Gate G (Russell 2007), and possibly another hall (J-122b) near J-111. These administrative nodes seem relatively "vacant" in the sense that elites did not reside nearby, and their official use was probably periodically timed with calendrical events (chapter 3; P. Rice 2004, 2009c; Freidel and Sabloff 1984:161). Two possible men's houses or schools (*calmecac*) were observed by A. Smith (1962:181), including Q-116

and Z-146—both of these structures are described as large, columned, and open on all sides. Although Aztec ethnohistorical sources describe structures where young, unmarried men lived—and these may have existed at Mayapán (Proskouriakoff 1962a:89–90)—this usage is difficult to distinguish archaeologically from features that served as periodic guest houses for visitors, feasting, and conferral (chapter 3).

The J-111 hall/oratory group and the R-19b temple help to form a potentially significant axis and pedestrian route that extends from the Itzmal Ch'en group to the site center (Russell 2008a). A major north/northeast-south/southwest axis, described previously in this chapter, is formed by an alignment that connects Gate EE, the southern and northern termini of the site's main sacbe (hall group Z-50 and palace group R-95–98), Temples R-19b and E-11, elite residential group R-20–23, and Hall K-79.

Temple R-19b is centrally located within the walled portion of Mayapán's settlement (figure 4.7); the other three outlying temple groups mark major gates along the city wall. The R-19b group is part of the Square R plaza, and it is close to elite dwelling group R-20–23 and a suite of other east central features, including the R-9 elite dwelling, the Square K marketplace and adjacent elite neighborhood, and Hall K-79. It is unique among the outlying temple groups in its close proximity to elite dwellings. The location of outlying temples at the city strategically coincides with clusters of other features, including entrances, throroughfares, cenotes, and in at least two cases (E-11 and R-19b), proximity to the Square K plaza.

The hall found by Russell outside of the wall is spatially associated with a fourth gate (Gate G). The east central area within Mayapán is also punctuated by the J-111 hall/oratory group and another possible hall, J-122. The axis that extends toward the site center from the Itzmal Ch'en group aligns the J-111 group, Temple R-19b, the northern terminus of the largest sacbe (R-95), and the eastern portal gate (Q-127) to the site center (Russell 2008a:figure 9.21; Hare and Masson 2012). This axis splits the walled settlement zone to the east of the monumental center into northern and southern halves of nearly equal size (figure 4.6). To the west of the site center, an old road that was reused during the hacienda era extends from the vicinity of western Gate O to the northern edge of the site center and splits this part of the settlement into nearly equivalent north and south halves (figure 4.6).

As argued in chapter 3, outlying halls and temples represented important focus points for neighborhoods of the city. It is probable that secondary nobility (religious and secular officials) hosted ceremonies, feasts, and other congregations associated with these features. Justine M. Shaw (2001) argues

that outlying temples may have helped to define ancient Maya cityscapes and that they guided pedestrian traffic through neighborhoods. Shaw suggests that landmarks, open spaces, and formal plazas were as important as raised roads. Mayapán's landscape was similarly populated with cues for wayfinding (Lynch 1960). Specific pathways traced at the city in the form of stone lanes provide further support for the role of elite halls, temples, and palaces as important practical and symbolic landmarks. These pathways are described later in this chapter.

Elite Residences

The site's monumental center differs from Classic Period epicenters in that the main plazas lack palaces and are instead lined by architectural groups that include halls, temples, oratories, and shrines (Proskouriakoff 1962a:89, 99; Brown 1999:586–87). But the largest and most elaborate elite residences at Mayapán cluster around the eastern and western margins of the site center, and at least three of these could be termed palaces (figures 4.1, 4.2; 1952:196). We define two tiers of elite residences, based on criteria of size and elaboration (Hirth 1993a, 1993b). Table 4.1 lists elite residences identified by A. Smith (1962:218) and our own survey efforts. Some of Smith's "elite" residences were classified as such according to funerary offerings, although their surface architecture is indistinguishable from typical Mayapán commoner houses. These examples are excluded in our discussion of high-status residences in this chapter. More elite residences may be identified in future survey and excavation at Mayapán, as the Jones (1962) site map varies in the accuracy of size and surface details of architecture (Hare 2008a, 2008b).

Group R-85–91, excavated by Proskouriakoff and Charles R. Temple (1955), and group R-95–98 (northern sacbe terminus) each have vaulted tunnels that fully pass underneath their elevated basal platforms; only two such tunnels are known at Mayapán (figure 4.8). A third group, R-102–107, is atop one of the tallest basal platforms at Mayapán. It was built upon a tall natural hillock (or *altillo*) and is exceptionally large and complex (figure 4.8). These three groups are clustered together, aligned east-west, just to the east of the site center and its principal portal gate entrance (Structure Q-127, Strömsvik 1953).

Ten Tier 1 elite residences are recognized thus far based on size and elaboration (table 4.1, figure 4.1). In addition to the three palaces just described, five other large residential groups are clustered around the edges of the monumental zone (figure 4.1), including groups Q-208, Q-244, Q-41, Q-42, and Q-169 (J. Thompson 1954; Thompson and Thompson 1955; Smith and Ruppert 1956).
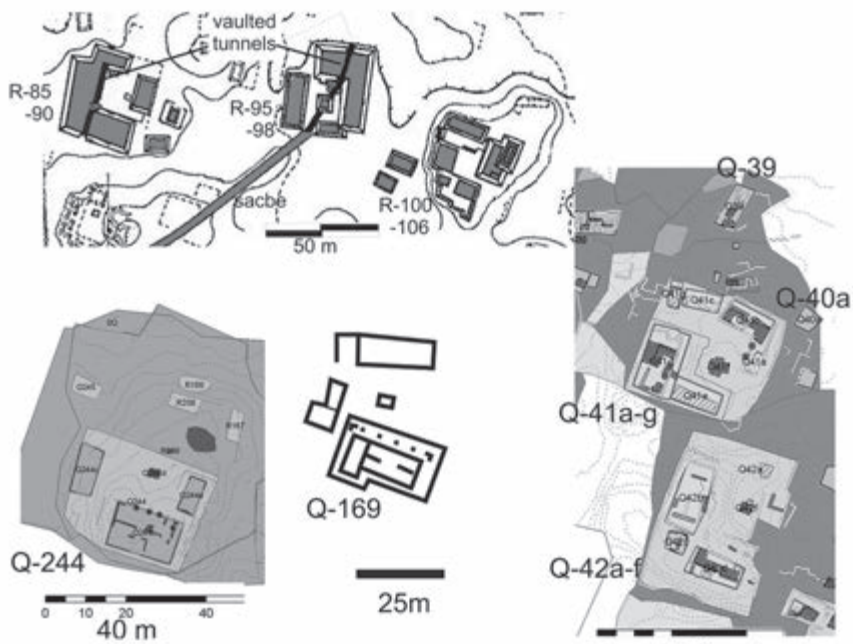
FIGURE 4.8. *Examples of Tier 1 elite residences identified at Mayapán. Groups R-85–90, R-95–98, R-102–107, and Q-169 modified from Jones (1962). Groups Q-244, Q-41, and Q-42 mapped by Timothy Hare.*

Structures Q-41, Q-42, and Q-169 are located on the western side of the site's monumental plazas; Q-208 is south of the Main Plaza; and Q-244 is located southeast of the center (figure 4.8). Two other Tier 1 elite residences include K-52, located northeast of the site center near the Square K marketplace, and group R-20–23, which is located to the east of the site center and near Temple R-19b, also close to the Square K marketplace (figures 4.1, 4.4). Group R-20–23 and Temple R-19b are located only 200 meters north/northeast of the northern sacbe terminus and the three-palace cluster mentioned previously and are near the Square R plaza.

Mayapán's only cluster of elite residential groups beyond the margins of the site center is found east of the Square K marketplace. Secondary elite groups R-9, K-99, and K-92, along with Tier 1 dwellings R-20–23 and K-52, are found in this neighborhood (figures 4.1, 4.4). A hall group, K-79, is also within this cluster, located 100 meters east of residential group K-92 (figure 4.7). There is a small attendant house within the K-79 hall group (A. Smith 1962:207).

Table 4.1 Elite residences at Mayapán listed by A. Smith (1962:218) as well as additional newly recognized examples.

Classification	Group	Area of largest structure in group	Total area of all structures in group	Location at site	Distance from Castillo (meters)
Tier 1 elite palaces	R-85-91	572.5	1,466.9	E/near site center near portal vault	282.0
	R-96-98	470.6	1,149.4	E/near site center near portal vault	368.0
	R-102-107	309.9	1,078.1	E/near site center near portal vault	444.0
Tier 1 elite residences	Q-41	187.9	1,745.7	W/near site center	173.0
	Q-42	152.9	2,187.6	W/near site center	154.0
	Q-244	183.8	1,277.7	SE/near site center	352.0
	Q-208	273.8		SW/site center	228.0
	Q-169/171	225.2	400.4	W/site center	138.0
	R-20-23	413.0	532.1	E of site center by Temple R-19/Square K marketplace	494.0
	K-52	–	670.4	NE of site center by Square K marketplace	652.0

| Classification	Group	Area of largest structure in group	Total area of all structures in group	Location at site	Distance from Castillo (meters)
Tier 2 elite residences	Q-119a	282.2	398.2	NE/near site center	254.0
	Z-152	128.1	261.2	S of site center	657.0
	Z-39	119.1	1,229.9	S of site center by southern sacbe terminus	395.0
	Y-24?	102.8	198.2	SE of site center near cenote	719.2
	Y-45	177.3	1,068.4	SE of site center	926.0
	Y-41?	105.8	335.9	E of site center	785.0
	R-100	82.6	1,121.0	E/near center (by Palace R-102–107)	418.0
	S-133	151.7	593.8	E of site center	800.0
	K-92	201.1	403.2	NE of site center by Square K marketplace	552.0
	K-99	119.0	268.2	NE of site center by Square K marketplace	560.0
	R-9	81.6	208.0	E of site center by Square K marketplace	428.0
"Elite" according to funerary features (A. Smith 1962)	U-2b	Lack surface characteristics of size and elaboration of residences listed above.			
	Y-1b	Lack surface characteristics of size and elaboration of residences listed above.			
	R-127	Lack surface characteristics of size and elaboration of residences listed above.			
	Y-2d	Lack surface characteristics of size and elaboration of residences listed above.			
	Z-4	Lack surface characteristics of size and elaboration of residences listed above.			
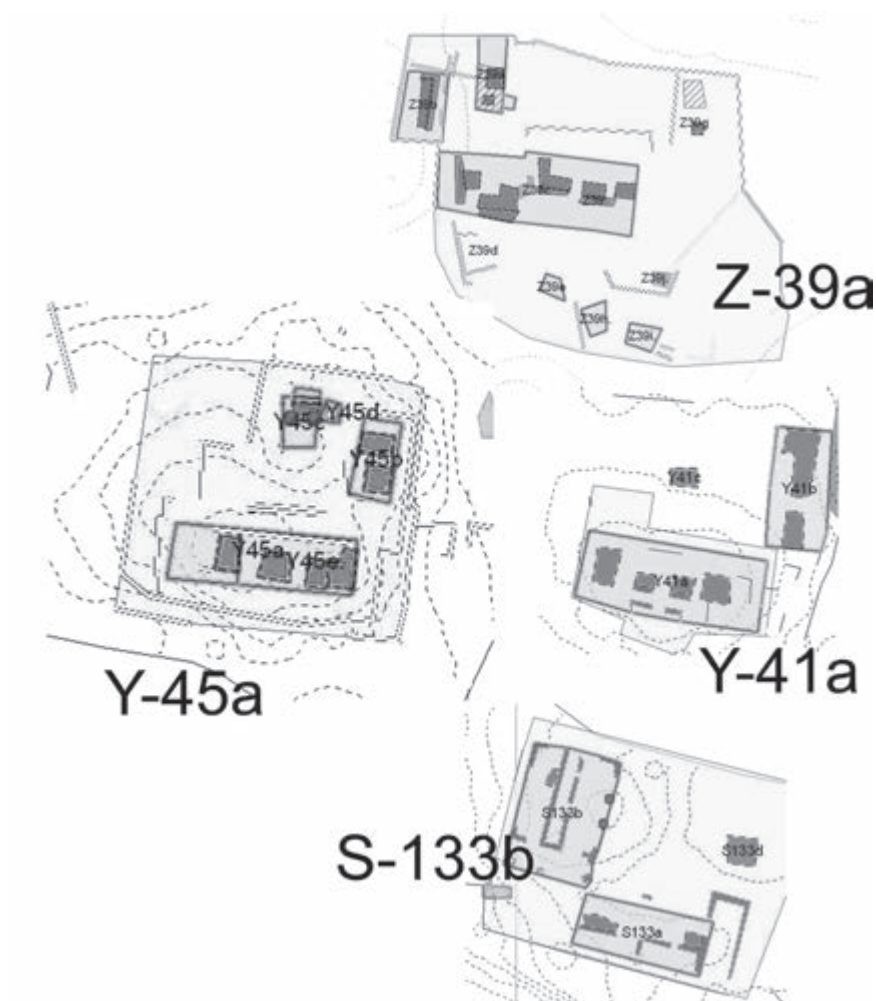
FIGURE 4.9. *Surface characteristics of secondary elite residences identified at Mayapán, mapped by Timothy Hare. For a full view of Y-45a's lower tier of rooms, which do not appear on this surface map, see figure 3.15.*

This group of houses and the hall gives the appearance of an elite marketplace neighborhood at Mayapán. But this zone's link to the site center is blended by the regular occurrence of significant architectural groups between the cluster and the monumental zone, including elite House Q-119, the three-palace cluster to the east of the center, and Temple R-19b (figure 4.7). In general, the zone

between the (Square K) marketplace and the site center was a hot spot for elite activities, and by implication, northern Gate D (just beyond the Square K plaza) was an especially important entrance to the city.

Other individual elite dwellings are located near key features. Secondary elite Residence Q-119 is located on the eastern margin of the site center, and it is just to the north of the three-palace cluster (figure 4.1). Secondary elite House R-100 is adjacent to one of these palaces (R-102–107), placed at the base of the tall hill on which the palace rests (figure 4.8), and was probably part of this group. Elite Residence Z-39 is near to the southern sacbe terminus (Z-50 hall group). Other examples of Tier 2 residences are dispersed as relative isolates in the settlement zone (figure 4.1), including Y-45a, Y-41, S-133, and Z-152, although a pattern of pairing may be evident in the relative proximity of Z-39 and Z-152 (250 meters apart) and Y-41 and Y-45a (200 meters apart). Two of the structures listed in table 4.1 are possibly Tier 2 elite residences but need further investigation: Y-41 displays surface similarities to Y-45a. The map of its altillo indicates a rear rectangular shape that may represent lower infilled rooms like those of Y-45a (chapter 3). Structure Y-24a's elite status is also suspected but is unconfirmed. Examples of Tier 2 dwellings are illustrated in figure 4.9.

The proximity of Tier 2 elite dwellings to cenotes varies. Structure Z-152 is adjacent to Cenote Xot Zum Ch'en while Y-41 is about 150 meters from Cenote Chac Si Kin. A. Smith (1962:219) suggested that Structure Y-24a represented an elaborate house. Although no detailed plan of it was published, he mentions that it had four masonry columns that supported a thatched roof in the frontal room. Groups Y-24 and Y-45 are located nearly equidistantly (about 100 meters) from Cenote Cosil, and Cenote Zuytun Cab is also located 100 meters from Y-24. It is interesting that the Square R three-palace cluster and some other Tier 1 and Tier 2 elite residences in Squares Q, R, and K are not located near cenotes, yet these are some of the largest elite houses at Mayapán. Other factors such as proximity to the site center, the marketplace, and the route from Major Gate D to the center were perhaps more important. These families were obviously able to obtain water from more distant cenotes, probably with the aid of servants.

The elite dwellings identified thus far at Mayapán attest to the previously noted pattern of upper-status feature dispersion throughout the city's neighborhoods that Diane Z. Chase (1986, 1992) argued represent a "barrio" model of site organization. This model contradicts Landa's 1941:62–64) claim that the city's nobility dwelt only in the site center. It is also known that there is no consistent relationship between cenotes and high-status elite dwellings (A. Smith 1962) despite Landa's (1941:62–64) statement that "the wells, if there were few

of them, were near to the houses of the lords." It is difficult to evaluate why he felt that wells were scarce, as twenty-seven well-known examples are shown in figure 4.6. In Colonial-era towns, palaces and cenotes were more closely associated (Restall 2001). Aspects of both Landa's and Diane Chase's models seem to be correct for Mayapán. Most of the Tier 1 residences are in fact within a 400-meter circumference of the site center (figure 4.1), with two exceptions in the market vicinity. These large groups were probably the homes of the city's most influential governors, or the "lords and priests" referred to by Landa. Tier 2 elite residences, perhaps occupied by "the richest and those who were held in highest estimation"—after the lords and priests—can be found in neighborhoods farther from the site center, and these probably housed secondary officials or lower ranking council members, some of whom would have served as administrators for neighborhood affairs (chapter 2). Diane Chase (1986:376) presented ethnohistoric and archaeological evidence attesting to the practice of rotating ritual-political activities at dispersed elite residences in the barrios of Postclassic Maya sites. Although elite residences are not found in all parts of Mayapán thus far, they are regularly distributed across parts of the east central and south/southeast central portions of the city (Squares Q, K, R, S, Y, and Z, figure 4.1).

The proximity of some high-status houses to the Square K plaza implies that long-distance merchants of noble birth may have occupied them. Smaller, outlying elite dwellings like Y-45a would have been occupied by mid-level officials or neighborhood priests. These residents were also probably engaged in trading activities, given the diverse nonlocal goods, a storeroom, and ubiquity of cacao pod effigies at House Y-45a (chapters 3, 6). Excavations are needed to determine the variation in production and exchange activities of Mayapán's elites in order to compare them to their Classic-era counterparts (McAnany 1995; Hendon 1992, 1996). Ironically, elite houses are poorly studied at Mayapán compared to commoner houses; Y-45a remains the only fully investigated secondary elite residence at the city to date. A range of part-time occupations of elites and commoners is described in Contact Period accounts, and we can anticipate diverse and variable activities (chapter 5). Investigation of these structures is also important for a fuller reconstruction of administrative duties. The presence of a throne-like receiving room and an elaborate bench at Y-45a, along with at least one rear storeroom, suggests oversight. The elaborate passageway and shrine room of this edifice points to religious obligations as well (chapter 3).

All of the elite dwellings identified thus far (except for one) are at least 300 meters from the interior edge of the city wall—the exception is Y-45a, located 140 meters from the wall. Dwelling safely within the urban zone may have been advantageous. Onsite administration of the city gates was clearly

not the responsibility of important elites. As Smith and Ruppert claimed to have examined each building at Mayapán, square by square, it is unlikely that they missed any other Tier 1 elite houses (Ruppert and Smith 1952, 1954; Smith and Ruppert 1953, 1956; A. Smith 1962:173). Nonetheless, they failed to identify some Tier 2 dwellings that we located (table 4.1), and the infilling of rooms, as at Y-45a, makes surface mapping only partially reliable for this task. Future work will likely reveal more Tier 2 structures. Thus far, no elite features of any kind (dwellings, halls, and temples) have been found in the western fourth of the city (Squares N, M, O, P, BB, AA, and DD), nor, for that matter, in Square L (north of the site center) or squares that encompass the city wall—C, F, G, X, and EE (figure 4.1). Neighborhoods of commoners may have existed in these areas that were more loosely organized or affiliated with spatially disembedded administrators. Although elite residences were not located near the wall or gates, four gates were marked by nearby outlying ceremonial groups or temples: Gates D (Temple E-11), T (Cenote X-Coton group), H (Cenote Itzmal Ch'en group), and G (Hall 18-O-1). A. Smith (1962:208) suggested that House H-24 was occupied by local elites near to Itzmal Ch'en, but our inspection of this structure reveals it to be a typical commoner type dwelling of unimpressive size and complexity. Activities at public architecture near city gates were likely overseen by officials residing elsewhere in the city. A large, simple structure (G-17) located in Milpa 29 by Gate G may represent a sleeping facility for guards (chapter 5). Focal architectural groups with temples and/or halls provide further evidence of barrio integration with the site center.

THE STREETS OF MAYAPÁN

Major Avenue

Our inspection of Bullard's map of Squares K and D indicates two relatively straight potential pedestrian paths from Gate D to the Square K plaza. These routes would not have crossed albarrada houselot walls (figure 4.4). The Square K plaza and its adjacent elite residential district were situated along an axis between Gate D and the site center, and these features would have marked a major pedestrian route. Although fully mapped sectors are not yet available below Square K, the southern end of the market plaza is aligned with a set of highly conspicuous features to its south that fill the space between the plaza and the site center (figures 4.1, 4.2). Continuing south from the Square K plaza, one would have entered another empty, quadrangular space (the Square R plaza). Notably, outlying Temple R-19b is located at the northeastern edge of

the Square R space (figure 4.7). Two of the houses within the cluster of seven elite groups by the Square K plaza are also near to Temple R-19b (groups R-9 and R-20–23).

Pedestrians walking due south of the Square K plaza would have crossed a space relatively void of residences in Square R, and rows of aligned altar/shrine structures (listed previously) may have marked a formal pathway. Individuals headed toward the site center could have turned west upon nearing the east-west alignment of the site's three palaces (R-85–90, R-95–97, and R-102–107) and entered the center through the monumental zone's only interior portal gate (Q-127), but alternatives are possible. A row of shrines is also represented by Structures Q-3, 4, 5, 6, 10, and perhaps Q-11, and these are near Q-116, a curious, anomalous building. A. Smith (1962:223) suggested that this open building with columns on all sides might have served as a school. Alternatively, it may have been a house of commerce such as that described by Piña Chan (1978:43). Pedestrians passing by Q-116 would likely have continued south to the the portal gate (Q-127) group, where they would have turned west to enter the monumental zone.

The portal gate (Q-127) would have been conspicuous, as it is part of a group that includes one of the site's four round structures (Q-126) and a large colonnaded hall (Q-129). The significance of this portal gate has been little emphasized since Shook (1955:267) described it as "the most elaborate and formal entrance to the ceremonial center of Mayapán" and the "principal eastern avenue of approach to the heart of the city," following Gustav Strömsvik's (1953) early investigations. Thanks in part to Bullard's maps of Squares D and K, we have documented probable street segments of the hypothesized route, and as discussed at length in the previous sections of this chapter, the routes are punctuated by key architectural nodes. The locations of pathways that we identify in Squares D, K, R, and Q are hypothetical, but they represent the most direct and efficient connections between key features.

Other hints about Mayapán's ancient road system are provided by a system of historical dirt roads through the city in use during the 1950s and mapped by Morris Jones (1962). In three places, these roads correspond well with vestiges of ancient pathways in our surveyed areas of the site, as shown in figure 4.6, on a north-south route near the western margin of the city, along another north-south route near to Gate B, and along a historical north-south route to Chapab (according to Jones 1962) that parallels the western margin of the site center and exits the city wall through southern Gate EE. In figure 4.6, historical trails are delineated in light gray and the stone-lined ancient pathways that we have mapped at Mayapán are indicated in black. Ancient pathways at the site are

indicated by stone lanes, broad trails of flat bedrock, or both. Comparisons reveal areas of overlap and suggest that some of the trails of the 1950s were in use during the Mayapán era. Full mapping of the site will permit a more complete comparison. It is noteworthy that the historical trails, if ancient, lend a more orthogonal, gridded quality to the city street system, especially in the western part of the site, as the streets are nearly north-south in orientation and are bisected east-west by another old trail. The trails of the eastern portion of the site are consistent in their northwest-southeast orientation. Figure 4.6 also indicates that the north-south trails are relatively regularly spaced from east to west. Some, but not all, utilize ancient gates of Mayapán's city wall. The majority of those that do not utilize the ancient gates cross the wall near the gates. Perhaps the breadth of carts made the narrow gates impractical in the Colonial era and beyond.

It is notable that the R-95–98 palace is linked to a southern hall compound Z-50 by the site's principal sacbe (figure 4.2), which continues in the same northeast-southwest direction as the pedestrian pathway that we identify from Gate D to the center. Visitors not bound for the center may have traveled along this sacbe to the hall compound at its southern terminus and beyond. The R-95–98 palace is thus situated at the intersection of two of the city's primary roads: the route from Gate D to the site center to its north and the major sacbe extending to the south. The road that heads from Itzmal Ch'en toward the site center also probably led to this juncture. It is perhaps noteworthy that the Gate D route and the site's principal sacbe nearly bisect Mayapán into two almost equal eastern and western segments. Similarly, the east-west lane that heads inward from Itzmal Ch'en and the east-west historical (and probably ancient) trail that heads inward from the Gate O vicinity, divided the northern and southern sectors of the city. The full extent of the route from Itzmal Ch'en to downtown awaits ground documentation. These effects are illustrated graphically in figure 4.2. In addition to major routes, winding lanes used for neighborhood purposes divided much of the city.

OTHER ROADS FROM CITY GATES

The Gate D route expands on Bullard's published work on pedestrian lanes at Mayapán. He was especially interested in identifying parallel alignments of stone walls independent of houselot walls (Bullard 1953, 1954; A. Smith 1962:209–10, figure 1). He discovered the longest segments of lanes heading from inside Gate H near Itzmal Ch'en toward the site's interior (A. Smith 1954:244). This set of lanes is part of a matrix of other shorter segments and

represents the most well defined set of pathways at Mayapán (figures 4.1, 4.3, 4.5). Bullard (1954:244) presumed that many of the streets through Mayapán were likely simple trails through residential areas, and some lanes are formed by spaces left between sets of houselot walls that define residential *solares* (enclosures). Only a few pathways were formed by parallel sets of lanes independent of houselot property walls (Bullard 1952:39. A. Smith (1962:210), discussing the Mayapán road system, concluded, "There does not seem to be any organized system of paths or streets—just confusion." Bullard and A. Smith were mostly concerned with searching for straight roads that were independent of houselot walls, perhaps due to the fact that an example was found in Squares H and I. But relatively direct pathways formed through houselot walls were also important for linking features together. Intervening open spaces and the use of flat bedrock roads were additional key attributes of pedestrian routes. Mayapán's lattice of interlocking solares, field walls, and pens may have added additional security that inhibited visitors from arriving at the site center except by prescribed routes, as suggested for Chunchucmil (Dahlin and Ardren 2002).

Four other ancient routes are identified thus far beyond those already discussed that originate at Gate D and Gate H (the Itzmal Ch'en vicinity). We traced the four potential pathways through houselot walls and open spaces northward from Major and Minor Gates EE and Minor Gate AA toward the center (figure 4.1). Pavement routes were not simply fortuitous in relying on bedrock naturally exposed by erosion. In some cases it is probable that level strips of bedrock were cleared of soil for the purpose of path making. The conjunction of sections of parallel stone lanes and exposed bedrock suggests that some path trajectories were strategic and that bedrock was intentionally cleared. Bullard (1954:243) excavated in a lane of parallel stones near to Itzmal Ch'en (by Structure I-54) and discovered a broad flat stretch of bedrock within them. The neglected surface had been covered by soil since the abandonment of the city. Excavation at Mayapán regularly reveals the modification of bedrock. At times it was scraped clean to provide a patio surface for dwelling groups. Bedrock cavities near houses were often filled in with soil and rocks to create a level surface (e.g., Hutchinson and Delgado Kú 2012; Kohut et al. 2012). The placement of burials into bedrock cavities and the fact that they do not intrude into one another also reveals an intimate knowledge of bedrock and its characteristics (e.g., Latimer and Delgado Kú 2012). The search for bedrock streets at Mayapán merits sustained scientific attention and will require excavation in places where surfaces have been buried.

Pathways are more difficult to identify in areas of dense forest, but parallel lane segments hint at their existence (Hare 2008a). Once the albarrada alignments of the site are fully mapped during the 2013 Mayapán LiDAR Project, all of the stone-lined routes from the gates toward the center will be traced. Currently we are limited to mapped sectors. Some lanes would have been less significant for visitors and would have served the needs of residential zones, as is the case for many cities in world history.

Paths from Minor and Major Gates EE

The paths northward from Minor Gate EE cross a zone of relatively open space where only a few houselot walls are present near the wall in the northeastern portion of Square EE (figures 4.1, 4.6, 5.1). One potential path could have veered west along the wall before turning north and intersecting with a historical trail to Chapab (just north of Structure EE-173). Further north, before reaching the monumental center, this historical trail passes an open space that contains two cenotes (Yax-nab and X-te Toloc). Brown (1999:525–34) observes that cenote names are used to designate places today and that this tradition probably has great antiquity. An alternative trail north from Minor Gate EE heads more directly north-northwest and would have reached Cenote Xot Zum Ch'en (the slight westward zag of the stone lane is at the cenote) before continuing northward to group Z-50, the southern terminus of the site's main sacbe. The sacbe would have directed pedestrians to palace group R-86–90, located just east of the center's portal gate.

Northward from Major Gate EE, there were two alternatives for pedestrians headed toward the site center (figures 4.6, 5.1). Both paths would have encountered Cenote Ch'en Kulu, located just inside the gate. One path directly overlays a historical trail to Chapab shown on the Jones 1962 map and heads directly toward the monumental center's western margin. It passes by Cenote Yo Dzonot (the first westward zag in the trail) and also reaches the location where Cenotes Yax-nab and X-te Toloc are located in Square Z before heading further north to the site center. The alternative route turns west at Cenote Ch'en Kulu, then heads northeast to Cenote Ch'en Pie, followed by the Cenote Yax-nab and X-te Toloc locality, which appears to have been a major intersection. This route ultimately joins the historical trail to Chapab. Although we did not anticipate finding cenote landmarks on these trails and simply sought to trace clear walkways from the gates toward the site center, it makes sense that these important landscape features and critical resources were incorporated into Mayapán's roads.

Path from Minor Gate AA

Two other pathways are identified in Squares AA and DD that extend into the city from Minor Gate AA (figures 4.6, 5.1). One path follows the interior of the city wall in a southeast direction before turning east, then northeast toward the Cenote Yax-nab and X-te Toloc location. This path would then have joined the historical trail to Chapab that also coincides with paths from Major and Minor Gates EE. Upon entering the city at Minor Gate AA, two cenotes would have been accessible to pedestrians using this path—going to Cenotes Polbox and Ch'en Max would have involved only a minor detour before proceeding inward to the city.

A second path heads directly northward a short distance from Minor Gate AA to Cenote Ch'en Max. It directly overlays another historical trail mapped by Jones (1962) that extends from Minor Gate AA northward. Although the historical trail goes all the way to the north part of the city wall and beyond, to the town of Telchaquillo, it does not cross the wall near any ancient gate (figure 4.6). Much of this trail remains in forest, but sections of it have been detected archaeologically in our work in Milpa 12 (mapped by the PEMY project) that covers portions of grid Square P (figure 4.6). This historical trail crosses another old east-west road that links Hacienda Xcanchakan (through an opening near western Gate O) with the site center. Just north of this inter-section, the north-south trail is delineated by an ancient lane of parallel stone walls that are independent of houselots in the northwest corner of Square P. This latter characteristic strongly suggests the trail's antiquity. Following the trajectory of this historical route from the stone lane southward through Milpa 12 to the southwest corner of Square P, it does not cross any houselot groups and is easily recognized by broad, flat segments of exposed bedrock that formed a natural pavement.

It was fortuitous that we were able to extend a potential trail from Bullard's Square AA map with the survey data from Milpa 12 in Square P and the historical trail mapped by Jones (1962). Cenote Ch'en Max is the only doc-umented water source on the entire extent of the trail from Square AA to the north wall. Sections of the historical east-west trail from Xcanchakan to Mayapán's center may be of greater antiquity as well (figure 4.6). A. Smith (1962:210) observes, "A fairly straight route could be followed from the large gate (Gate O) in Square O to the main group without crossing property walls," but no evidence (i.e., parallel lanes independent of houselot walls) indicating a definite road or street was found by the Carnegie team. The exact location of this route was not published by Smith or Bullard, but it may coincide with portions of the Xcanchakan road that are currently in use.
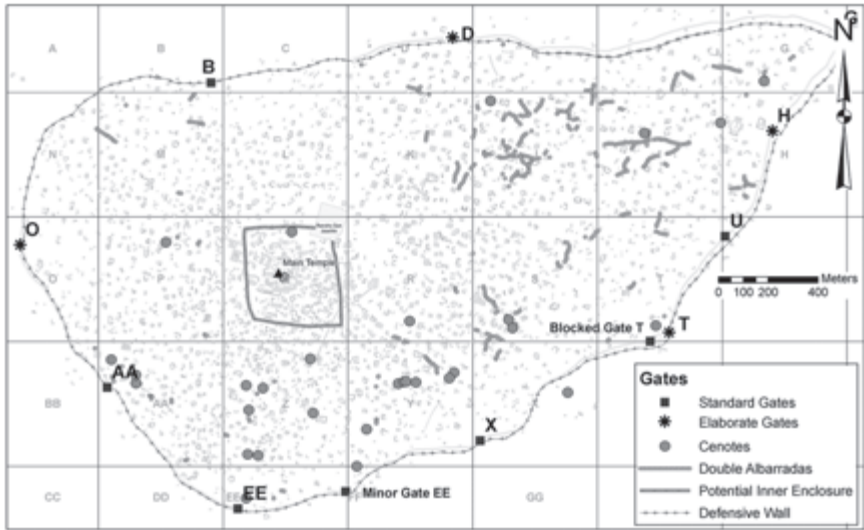
Figure 4.10. *Other short lane segments identified in survey of portions of Mayapán's settlement zone—these features are shorter than the pathways identified in figure 4.1. Map by Timothy Hare.*

Path from Minor Gate B

One final pedestrian pathway can be proposed from our investigations. It extends southward from Minor Gate B, located by the north part of the city wall. Like the pathways just described from Gate AA, it also follows a historical trail marked by sections of broad, flat, exposed bedrock (figure 4.1, 4.6). After entering Minor Gate B, pedestrians would have turned east for a few meters before encountering the trail that extends due southward. Oddly, the historical trail cuts through Mayapán's wall only about 120 meters east of Minor Gate B. As the trail does not cross through houselot walls and is marked by natural bedrock pavement similar to that which we observed in Milpa 12, we infer its antiquity. We marked this path as far as our mapping in Milpas 19 and 24 permitted. The route indicated on the Carnegie map continues all the way to the western margin of the site center and forms part of the trail to Chapab that joins up with four proposed pathways from Minor and Major Gates EE and Minor Gate AA. There are no documented water sources along the trail that extends southward from Minor Gate B.

Our survey team searched for additional lanes at Mayapán. This search was conducted with the help of local assistants—notably, Fernando Flores of

Telchaquillo, who remembered many lane segments that he had spotted in the forest (Hare, Ormsby, and Speal 2002). We identified eight additional segments of semi-linear lanes formed by spaces between houselot walls (figure 4.10). The average length is 33.1 meters, with lengths extending from 5.9 to 96.8 meters. They do not appear spatially clustered, nor do they concentrate in areas of especially light or heavy settlement density. Some routes may have simply served the needs of pedestrian traffic within the neighborhoods where they are found.

NAVIGATING THE MAZE

In contrast to prior assumptions that Mayapán's network of streets was confusing, we suggest that the mazeway of pedestrian lanes was coherently perceived and used. Carnegie scholars expected Mayapán's streets to be well marked by permanent features such as nonresidential stone lanes, which was only sometimes the case. Bullard was correct in proposing that the main streets of Mayapán were trails through open spaces between houselot walls (Bullard 1954:244; A. Smith 1962:210), but the significance of these trails may have been underestimated. Some routes directed travelers heading inward from the city gates toward features of interest such as interior temples, halls, sacbeob, cenotes, the central marketplace, and the site center. These lanes also connected various neighborhoods. Water sources were key features of the Mayapán landscape, as Brown (1999:541, 2005, 2006) has emphasized. The pathways described here indicate that certain cenotes may have served as navigation points as well as destinations of practical and symbolic importance (Brown 1999:541, 2005, 2006). The public nature of Mayapán's cenotes has been previously observed (A. Smith 1962:210, 265; Brown 1999:72). Although they are sometimes encircled by their own walls, they are not contained within the solares of house groups. Cenote Acanbalam, near to Itzmal Ch'en, is at the juncture of four lanes (A. Smith 1962:210). Although dense residential zones in the southern portion of the city had plentiful access to cenotes, this was not true for the entire city. Some paths, such as the one descending from Gate B, do not coincide with cenotes. As figure 4.6 indicates, some dense residential areas formed in areas without close access to cenotes, and some neighborhoods of lesser density were near cenotes.

DISCUSSION

The spatial organization of Mayapán manifests greater complexity than previously recognized (figure 4.1). The city is not simply an aggregation of resi-

dences extending outward from an elite precinct. A concentration of temples, halls, and the largest residential groups around the monumental center reflects a clear nucleus that has long been recognized (Landa 1941:23–26; Jones 1962; Proskouriakoff 1962a). Some elite residential groups and features, however, are found well beyond the Main Plaza (A. Smith 1962:264–65; Proskouriakoff 1962a; D. Chase 1992:128, 130, figure 8.4). Diane Chase's emphasis on the presence of outlying elites at Mayapán is refined in our closer examination of the size and elaboration of elite residences. The site's seven largest elite dwelling groups are found on the east and west margins of the epicenter. Some secondary noble residences are distributed as isolates or pairs through parts of the city east and south of the Main Plaza and in a cluster of such dwellings next to the probable central marketplace.

Newly identified pedestrian pathways extend from the city's gates toward its ceremonial core as well as to functionally distinct market and cenote spaces. These routes are visible as trails between houselot walls or independent lanes, over bedrock pavements, and through open spaces. The routes connect features such as cenotes, a marketplace, and civic-ceremonial groups. Prominent outlying elite architectural compounds are commonly identified at other primary Mesoamerican centers—for example, at Cobá, Uxmal, Chichén Itzá, Xochicalco, and Monte Alban (Blanton 1978; Folan 1983:53; Ringle and Bey 2001; Cobos and Winemiller 2001; Cobos 2004; Kristan-Graham 2001; Hirth 2003b:303). The identity of outlying elites is an important question for cities, as they can represent diverse social groups linked to home communities who arrived at the city at various points in time (Janusek 2002:52–55). The argument that some of these outlying elite houses were likely the homes of neighborhood officials is highly compelling (Folan 1983:53; Cowgill, Altschul, and Sload 1984:175; Millon 1976:25; D. Chase 1992; Mastache, Cobean, and Healan 2002:171). Outer temples and halls may have been nodes for elite interaction, hospitality, calendrical celebrations, and religious pilgrimage (Wallace 1977; Freidel and Sabloff 1984:41; D. Chase 1986; Freidel 1981; Masson and Peraza Lope 2004). Barrio temples have been identified and discussed for Teotihuacan (Cowgill, Altschul, and Sload 1984) and Tula (Mastache, Cobean, and Healan 2002), and implicit in this term is their role as focal points for neighborhood units in which they were embedded. Temples also demarcated urban zones at Sayil (Carmean, Dunning, and Kowalski 2004). The presence of replicated features in a settlement zone implies a strategic purpose of overall site integration (D. Chase 1986:364).

Neighborhoods are difficult to identify archaeologically, and a variety of other fluid or formal city subunits may have also been integrated by the

activities at nodal facilities. The relationship of focal architecture with neighborhoods or districts at Mayapán is unclear, as there is no distinct evidence of spatial clustering or other meaningful residential divisions or aggregations (e.g., M. Smith 2010a:145). But Brown (1999, 2005, 2006) makes a good case for major cenotes as profound markers for social groups at Mayapán, and clusters of public architecture that include cenotes such as Itzmal Ch'en are good candidates for neighborhood or district symbols. A more complete analysis of neighborhood divisions will be feasible once Mayapán's networks of lanes are mapped. It is reasonable to suppose that outlying elite houses, temples, and halls served to connected the daily activities of ritual and economic life in Mayapán's settlement zone to the administrative goals of the site's government. The case for residential zone administration is strong from Contact-era accounts (chapter 2).

It is important to note that residential zones vary in their characteristics. Focal architecture is not found in all areas of the site, as the western fourth of the city lacks them. Similarly, George L. Cowgill (2007:279) observes that Teotihuacan's outlying "three-pyramid complexes" tend to concentrate in the site's northwestern quadrant, prompting him to doubt that they functioned primarily at the barrio level. Variation may have existed in the degree of settlement organization and significance, and smaller elite residences may have administered poorer or less influential residential areas of the city. Nodal features at Mayapán and earlier sites also served purposes beyond the neighborhood scale as landmarks and nodes of polity-wide ritual circuits. Four outlying rubble step pyramids are thought to represent boundary markers for Sayil (Tourtellot and Sabloff 1999:75) while other temples may delineate urban zones (Carmean, Dunning, and Kowalski :435). From Russell's 2008a surveys and our own PEMY mapping, we have located shrine structures at some of the cardinal points outside Mayapán's city walls that are candidates for Uayeb or other rites that used quadripartite settlement markers (figure 4.2, Russell 2008a).

Artifacts or house styles tend to be poor indicators of neighborhood-scale social identity at Mayapán despite evidence for much variation in economic activities at individual dwellings (chapters 3, 5). The distinctiveness of House Y-45a's pottery and architecture (chapter 3) contrasts with other houses investigated at the city, and it is probable that continued extensive work at individual dwellings will reveal more socially contrastive assemblages. It is clear, however, that Mayapán commoner houses exhibit much overlap in material inventories (chapters 5, 6), and diversity may be more marked at elite dwellings.

At least three important neighborhoods at Mayapán are distinguished by high social status or occupation. These zones loosely conform to Kevin Lynch's

(1960:103) expectation for districts as "an area of homogenous character, recognized by clues that are homogenous throughout the district, and are discontinuous elsewhere." The Tier 1 elite residences that bracket the monumental center represent a key component of epicentral Mayapán, which was the center for civic-ceremonial activities and activities of top-ranking nobles and priests. A second cluster of elite residences, as well as a hall group and a temple group to the east and southeast of the Square K marketplace, also points to an upscale neighborhood between the epicenter and Gate D. A third neighborhood, discussed in greater detail in chapters 5 and 6, is defined as a crafts barrio due to its concentration of households engaged in high levels of surplus production of shell, stone, and pottery objects. The crafts barrio (Milpa 1) extends along the western edge of the monumental zone and contains two of the Tier 1 residences. This concentration of crafting households is unique thus far for the site, and this zone was probably an important part of downtown Mayapán. The concentration of wealthy residents and the need for consumed goods in the epicenter were probably important factors that drew crafting households to this part of the city.

Key members of the confederacy were probably responsible for building and operating the major public buildings of the city, in a manner similar to that proposed for the organization of other late Mesoamerican cities (Hirth 2003b; M. Smith 2008). Like the Aztec altepetl, the Maya *cah* was a pervasive sociopolitical unit, comprised of leaders housed in a capital town, members of the nobility, supporters, and landholdings. Both of these organizational units had fluid geospatial territories as a consequence of dynamic, shifting politics, especially in the Colonial Period. For Mayapán, resident elites likely helped draw settlers to the city from their outlying *cahob* to provide services (Landa 1941:23–26). Once settled at Mayapán, the labor and service sector required organization for the extraction of obligations of work, military service, tribute, and ritual. The manner in which this was accomplished was likely to have been complicated and variable, given the citizenry's diverse origins and agendas (Canuto and Fash 2004:58–59). The founding of neighborhoods from outlying townships was but one factor in their ultimate composition and appearance in the archaeological record. The identity of neighborhood administrators and residents would have shifted with political climates and the emergence of new opportunities presented to those born in the urban environment. While top-down processes were probably instrumental to the founding and initial settlement of the city, we can expect that bottom-up processes increased in importance through time within the residential zone, especially with respect to dwelling group characteristics and composition (M. Smith 2010a:150–51).

For many Postclassic Mesoamerican states, a dialectic existed between polity identity and the pull of hometown or ethnic origins (Oudijk 2002; Pohl 2003b; M. Smith 2008:11). Intermarriage, pilgrimage, ritual calendrical cycles, investiture, and other activities promoted unity, at least for elite culture. The degree to which polity scale identity was embraced by commoners is a topic of considerable interest in Mesoamerican archaeology. Commoner dwellings and material assemblages at Mayapán suggest that polity scale identity was widely embraced in the settlement zone (chapters 5, 6). To the contrary, in Colonial Yucatán the cah was the single most important framework for social identity, although during this time there was no regional political capital that was working to centralize the cahob (Restall 2001).

While residential units may be highly replicated across Mayapán's landscape, as Brown (1999) demonstrates, this observation cannot be used to dismiss a higher level of organization of such units at the scale of the city. Other patterns of settlement reflect a significant degree of planning and administrative oversight than has been previously recognized. The replication of focal architecture, in our view, reflects an integrated elite political and religious bureaucracy rather than autonomous segments.

All "replicated" symbols are not identical. Temples differ in their orientation, numbers of staircases, decoration, architectural design, associated shrines or sanctuaries, and other buildings (chapter 2; Proskouriakoff 1962a; Pugh 2001, 2002; P. Delgado Kú 2004). Different decisions guided the construction of the Itzmal Ch'en and X-Coton outlying ceremonial groups. The temple at the former group is associated with three halls, an oratory, a circular shrine, and an attendant house; the latter has a double shrine/temple, an oratory, and a small shrine that is actually within the cenote. On a more general level, these two groups share attributes such as the presence of temples, cenotes, and a burial shaft in at least one building of the group—and these features are also shared with the suite of temples found at the site's monumental center in Square Q (chapter 2). On the other hand, unusual features exist at Itzmal Ch'en that may express idiosyncratic identity, including a high number of reutilized Terminal Classic mosaic mask sculpture fragments, a unique sacrificial stone carved with a prowling jaguar (Proskouriakoff 1962a:figure 10x), and a stone table supported by plaster sculptures (E. Thompson 1955). At major regional capitals, multiple dimensions of social identity should be expected, even within the same architectural and artifact assemblages. For example, John W. Janusek's (2002, 2004) study of Tiwanaku tracks patterns of incorporative versus transformative state strategies in artifact styles through time. At Mayapán, emblematic architectural conventions and certain ceramics (especially Ch'en

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Mul effigy and Navula Unslipped non-effigy censers), as well as commoner house styles, reflect widespread adoption of symbols of polity scale identity (chapter 5). These powerful signatures are found alongside idiosyncratic variations in artifacts, art, and domestic and public architecture that likely reflect the identities of social subgroups (Masson and Peraza Lope 2010).

The notions of homogeneity and chaos with respect to Mayapán's settlement organization must be reconsidered given new evidence for signs of logistical and symbolic planning. Recent studies of other lowland Maya cities of the Classic Period suggest that radial or linear roads, represented by elevated pathways, indicate urban planning and political or economic integration despite the fact that orthogonal, gridded patterns are not observed (Chase, Chase, and Haviland 1990:500; A. Chase 1998; Folan 1992; Shaw 2001; Cobos 2004). Visual cues that lend structure to an urban environment can take a variety of forms, and focal architecture is critical for wayfinding (Lynch 1960:3–4). The degree of planning, and even the function of cities themselves, is likely to have exhibited considerable variation among central places (Marcus 1983:195; Dahlin and Ardren 2002). The dichotomy of planned versus unplanned cities is a false one imposed by investigators (M. Smith 2007:6), and various plans can be imposed on a city's landscape by multiple factions through time (M. Smith 2007:6).

While Michael Smith (2008:8, 2010a) favors the notion that epicenters reflect planning, in contrast to residential zones at most Mesoamerican cities, we argue here that planning principles can now be observed outside of Mayapán's epicenter. A system of pedestrian pathways, by which individuals navigated the city using landmarks such as market plazas, interior and gate temples or hall groups, and cenotes, also attests to a degree of organizational complexity that has not previously been recognized. In addition, the antiquity of at least portions of historical trails across Mayapán adds a semblance of semi-orthogonality, as these tend to cross the city in axes that trend east-west and north-south. Such structure was not accidental but compatible with the terrain and technology for facilitating the hustle and bustle of urban life. Michael Smith's (2007:8) criteria of "coordination among the buildings" is one measure by which the degree of planning in urban form can be assessed; this refers to a pattern where "individual architectural features appear to have been arranged and constructed in reference to one another." For example, they may be oriented in the same direction or oriented toward focal features (M. Smith 2007:8). Replication of public architecture across a settlement is one useful way to identify residential subdivisions at Maya sites (D. Chase 1986:364).

Mayapán's civic-ceremonial groups exhibit a high degree of replication and spatial linkages (Proskouriakoff 1962a). They tend to articulate with pathways

and cluster with other key features of the site such as the gates or cenotes. Lines of sight would have been important at this city, especially from the gates to the epicenter (Shook 1952:15). Visibility represents another important facet of coordination of features (M. Smith 2007:23–24). The Temple of Kukulcan and Temple H-17 of the Itzmal Ch'en group, nearly 2 kilometers apart, are mutually visible, at least from their summits. The replication of epicentral monuments in outlying groups like Itzmal Ch'en conforms to another planning principle described by Michael Smith—that of "standardization" (M. Smith 2007:25; Delgado Kú, Escamilla Ojeda, and Peraza Lope 2012a, 2012b).

Economic patterns, attested to by artifact distributions, can shed light on the heterogeneity and integration of Mayapán (chapter 6; Masson and Freidel 2013). The regular distribution of lithic workshops throughout Mayapán's neighborhoods parallels a pattern observed at Xochicalco (Hirth 1993b) and suggests that neighborhood economies were one important aspect of city provisioning (chapter 6).

While defining the boundaries of specific barrios is not possible at Mayapán using current data, we hypothesize that outlying architectural groups may have coordinated activities linked to socioeconomic residential zones within the city (Hare and Masson 2012). In this chapter we have demonstrated the complexity of the urban settlement zone. Neighborhoods had unequal status, and some were occupied primarily by members of the commoner class. One area was a market and elite residential district; other zones were less densely inhabited but housed key landmarks and outlying ritual nodes for the city. Proximity to water and the size of domestic solares are factors that do not correlate neatly to residential density. Social factors, including norms and status, were compounded considerations that affected settlement growth and distribution through time. Water access was one primary need that would have motivated and guided daily traffic on city lanes through Mayapán. Chapter 5 examines residential density, which is greater near the site center, but complex patterning defies a simple generalization. Mayapán was a garden city with many open or enclosed nonresidential spaces for cultivation or informal use (Killion 1992a, 1992b; Chase and Chase 1998; M. Smith 2011b).

Lynch (1960:8) long ago pointed out that "environmental images," created by interactions between humans and the environment, can simultaneously embody unique and recognizable meanings to the observer. Focal nodes discussed in this chapter for Mayapán have high degrees of "imageability," or the capacity of a physical object to evoke an image in the observer that is legible and consistently understood (Lynch 1960:9). We have identified at least four of Lynch's (1960:45) five types of city images, including paths, edges, nodes,

and landmarks, which may overlap for a particular feature. More difficult to identify are his fifth type—districts—which may be implied by the others at Mayapán. The city wall provides a clear edge, and full mapping is needed to see whether interior streets also functioned as edges. Paths, nodes, and landmarks tend to occur in conjunctions of pedestrian lanes, cenotes, gates, and outlying monumental architecture—some of which are clearly spatially linked to the city wall. The most effective landmarks occur at junctions (Lynch 1960:81). Paths in particular rely strongly on landmarks for their continued use, and ethnoarchaeological studies reveal the degree to which landscapes within and between settlements were symbolically imbued (Snead, Erickson, and Darling 2006). City images may vary in scale, and it is probable that we have only identified the most conspicuous of those at Mayapán. As Lynch (1960:101) remarked, "A landmark is not necessarily a large object; it may be a doorknob as well as a dome." Lynch's approach to the organization of the city anticipated landscape approaches to archaeology that have been making important contributions to research for some time (e.g., Haviland 1970; Folan 1983; Kristan-Graham 2001; Pugh 2002; Snead, Erickson, and Darling 2006; M. Smith 2007; Chase et al. 2011). Most comprehensive settlement analyses of ancient cities in Mesoamerica have considered some of the aspects reviewed in this chapter for Mayapán.

The architectural nodes distributed in the barrios of Mayapán reflect the practical facilities of its confederacy government. At its height, Mayapán was held together by an efficient governmental council linked to the settlement zone by secondary overseers. The city's residential zones were at least partly populated by occupants with hometown affinities from various towns of the confederacy. A plethora of religious ceremonies that stimulated the construction of shrines and larger monuments is implied by the distribution of religious features that punctuate the city landscape. At least some of these features were probably tied to political status and the hosting of annual, k'atun, or may cycle events (P. Rice 2004). This type of ceremonial transfer of power is argued to have united members of the Kowoj polity in the Petén Lakes, where public buildings at Zacpetén are attributed to specific elite groups (P. Rice 2009c; Pugh and Rice 2009a, 2009b:165). The formation of Mayapán was a cumulative process, the end result of top-down and bottom-up processes and agendas that were at times complementary and at times competitive. Like many cities, it was "the product of many builders who are constantly modifying the structure for reasons of their own" (Lynch (1960:2). The next two chapters of this book focus on bottom-up processes and provide details of our analysis of residential settlement and material assemblages.