CERRO LAMPAY: ARCHITECTURAL DESIGN AND HUMAN INTERACTION IN THE NORTH CENTRAL COAST OF PERU

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Recent fieldwork concerning the late Preceramic/late Archaic period on the PeruvianNorth-Central Ccoast has revealed the existence of large architectural complexes, which scholars interpret as indicative of social complexity. This article is especially concerned with architectural design as an effective means to define social and political organization at Cerro Lampay. It concludes that there was not a highly formalized hierarchy but that power positions within the community could have been negotiated through ritual practices that included the dual organization of participants. It is highly probable that the residents of the North Central Coast were in constant and intense interaction during the late Archaic, which may have resulted in displays of competitive emulationin ritual settings.

Recientes investigaciones en la costa nor-central peruana han revelado la existencia de grandes complejos arquitectónicos para el Período Precerámico Tardío/Arcaico Tardío, que son considerados por diversos investigadores como indicadores de complejidad social. Este trabajo enfatiza el análisis del diseño arquitectónico como medio efectivo para definir la organización social y política en Cerro Lampay. Se concluye que no hubo una jerarquía altamente formalizada sino que las posiciones de poder dentro de la comunidad podrían haber sido negociadas mediante prácticas rituales que incluyeron la organización dual de los participantes. Es muy probable que los moradores de la costa nor-central estuviesen en interacción constante e intensa durante el Arcaico Tardío, hecho que pudo haber resultado en los despliegues de emulación competitiva en contextos rituales.

The last years have witnessed the increasing importance of the Peruvian North Central Coast in the discussion of the rise and development of social complexity within the Andes. This is due to recent survey and excavations (Shady and Leyva 2003; Vega-Centeno 2005), as well as a significant number of new radiocarbon dates (Haas et al. 2004a; Shady et al. 2001; Vega-Centeno 2005:189–199), which have revealed the existence of large architectural complexes throughout the Fortaleza, Pativilca, and Supe valleys, either "dating to" or "during" the late Archaic period (3000–1500 B.C., also referred to as the late Preceramic period).

Previous explanatory models for this phenomenon were formulated on the basis of surface evidence (Haas et al. 2004b; Shady et al. 2000) and have remained largely unmodified even in the face of rapidly accumulating data from excavations (Haas and Creamer 2006; Shady 2006a). This paradoxical situation arises because these models are built upon the notion that the massive platform mounds that characterize the sites under consideration could be evaluated in quantitative terms, as energy outcomes of corporate projects conducted by centralized leadership. There has been little interest in the nature of the original architectural design of these mounds and the relevance of such design in the development of sociopolitical dynamics. In addition, although the ritual nature of these buildings is often noted, the nature of ritual activities has been seldom addressed in order to evaluate forms of social complexity. As a consequence, new architectural data from excavations had little relevance on the models' testing.

In this text, I stress the need to address architectural design as an effective means to define the social and political organization of the human groups that were responsible for the construction of the early large-scale buildings of the Fortaleza,

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Pativilca, and Supe valleys. Architectural design can be analyzed through two dimensions: the *spatial structure*, understood as the arrangement of spaces and their access system, and the *perceptual structure*, understood as the sensorial experience and behavioral stimuli that it generates.

The proposed analysis will be based on evidence from the site of Cerro Lampay, which I excavated in 2002 and 2003. The results will be compared with existing data on other North Central Coast sites such as Áspero, Chupacigarro, and Caral, in order to define architectural patterns of regional scope. After this comparison and pattern definition, a working hypothesis is developed on the dynamics that generated the social processes that this region witnessed throughout the third millennium B.C.

The Study of Architectural Design: Spatial Structure and Sensorial Experience

Large-scale buildings whose construction or use was beyond the household sphere have always been considered as manifestations of social complexity and have often been labeled as "public architecture." Furthermore, evolutionary approaches gave particular emphasis to the study of public architecture as a relevant index of complexity (Kaplan 1963; Peebles and Kus 1977:432; Renfrew 1974:77; Service 1975:96). A significant characteristic of these approaches was the emphasis on the construction process, through which public architecture was usually addressed as an outcome of energy flows (expressed in labor power and craftsmanship skills) within a sociocultural system. Consequently, research was often oriented toward quantifying labor mobilization in order to define the scale of the society involved in construction (Abrams 1989; Adams 1975).

More recent archaeological studies of public architecture have addressed the qualitative variables of construction processes and labor organization (Cavallaro and Shimada 1988; Wills 2000) and have called attention to the active role that public architecture may play in the reproduction of a social order (Moore 1996; Nielsen 1995; Smith 1996). These new inquiries have brought new theoretical perspectives to archeological research, addressing the classic ideas of Edward Hall (1969) on the role of the built space in the construction of a social and a cultural realm or the considerations of Amos Rapoport (1976:9) on constructed space as a behavioral setting and a catalyst or releaser of latent behavior.

Within this perspective, it is necessary to understand the nature and spatial organization of a given architectural design, as spatial arrangements reflect not only the characteristics of a society but also a set of strategies for social interaction (Hillier et al. 1976:180). It is reasonable to assume that a specific and formalized design orients human action within it. Moreover, if such a design corresponds to a ritual space, the characteristics of its design might be more relevant in terms of acting as a "behavioral setting."

Following the considerations of Hillier and Hanson (1984:144–146), an architectural design can be understood as a structure in which spatial units are differentiated, distributed, and interrelated through a given access system. They have proposed an approach to understanding the spatial structure of a building as a syntactic organization in which spaces and accesses are compared to unit cells and their corresponding relations. Thus, a spatial arrangement can be translated into graphs in which spatial units are represented by circles and their accesses are represented as connecting lines. Graphics start with a circle that denotes the carrier space and establish a certain number of levels, according to the relative distance (in terms of cells to pass through) or depth of the spatial units from the carrier space (Hillier and Hanson 1984:144–146).

Graphics are the beginning of what is called a gamma analysis and reveal the structural arrangement of a building, understandable on the basis of two variables: asymmetry and distributedness. Asymmetry refers to the number of spatial units vs. the number of levels in which these units are organized, indicating the degree of hierarchy of the spatial organization. Distributedness is related to the number of spatial units and the number of relations or accesses among them, indicating the degree of centralization of the access routes within the structure (Hillier and Hanson 1984:147–155). Both variables can be measured through specific indexes: the index of relative asymmetry and the index of relative ringiness.[1]

It is important to note that the space syntax model is based on a binary distinction between

boundaries and permeabilities, conceived mainly as walls and doorways. Nevertheless, the differentiation of spaces and their access degrees might be related with other elements beyond walls and doorways, such as mobile barriers, differences in light sources, or relative height. Thus, the results of gamma analyses should be considered as plausible scenarios of human interaction that require additional data on the three-dimensional aspects of architectural design. These data can be addressed through an analysis of the perceptual structure.

The perceptual structure of architectural design can be approached on the basis of Edward Hall's definition of "proxemics" (1969:1), that is, the study of the observations and explanations of human use of space. According to Hall (1969:181), a human sense of space is a synthesis of sensory inputs: visual, auditory, kinesthetic, olfactory, and thermal. Thus, experiences of a constructed space will be related to the way in which such a space provides new sensory perceptions.

Architectural space often has the property of providing appropriate contexts for displays (including actions, objects, and facilities) that transmit messages through the five inputs. Among these inputs, visual and kinesthetic dimensions have the advantage that they are comparatively more grounded in the perception of surface elements that are more often preserved in the archaeological record.

The visual perception of space has been addressed by Tadahiko Higuchi (1983) in relation to the study of landscapes. Subsequently, this approach has been convincingly adapted to constructed environments by Jerry Moore (1996). Higuchi's proposal resides in the idea that visual environments can be decoded as a concatenation of surfaces, which are perceived at certain angles in relation to the observer (angles of incidence). The angle at which the line of vision strikes the observed surface determines what can be seen and how it is seen. The perceived surfaces of a visual environment can be classified into two kinds of planes: frontal and longitudinal. In addition, it is noted that the human line of vision is around 10° below the horizontal and that the need to move from this line of vision is critical in the perception of elevations and depressions (Higuchi 1983:38, 46–47). Hence, the combination of these factors forms the basis for the generation of three main kinds of spatial perceptions: width, depth, and height (Higuchi 1983:4, 24). These perceptions might enhance or reduce the experience of distance and also stimulate physical responses after such experience.

The kinesthetic perception is basically determined by the feasibility of displacement for a human body. Therefore, it might be inferred by identifying the physical constraints that are generated during displacement through a given spatial organization. Such constraints can be evaluated in terms of the size and shape of architectural facilities, such as the height of steps, the length of ramps, the narrowness of corridors or entryways, and the height of roofs. This perceptual dimension has been explored previously by Donald Sanders (1990) in his study of *Myrtos* residential structures, noting the relevance of what he calls behavioral conventions such as privacy, territoriality, and visibility of space.

The use of both syntactic and perceptual approaches has been addressed by Jerry Moore (1996:98–120, 179–205) in his study of Andean architecture, although they are not used for the same cases. In contrast, other authors advocate for the importance of combining gamma analysis with the analysis of spatial displacement (e.g., Brusasco 2003; Sánchez 1998). In addition, it has been noted that the quantitative approaches of gamma analysis require sufficient data, which are seldom present in the archaeological record (Cutting 2003). Nonetheless, when data are adequate, quantitative analysis has proved to be highly productive (e.g., Ferguson 1996).

In the following sections, both spatial structure and spatial perception of public architecture in the Central Andes will be evaluated. Before this analysis, however, the regional scenario will be discussed.

The Regional Setting: Late Archaic Public Architecture in the Central Andes

Throughout the twentieth century, the Central Andes was a major focus of research on and discussion about the emergence and nature of social complexity. Information on Andean complex societies was used to support general theories of sociopolitical evolution (e.g., Carneiro 1970; Steward 1963:206), as well as to propose the existence of singular evolutionary developments (e.g., Moseley 1975).

More recently, the study of the emergence of social complexity in the Central Andes has focused on the cultural manifestations of the late Archaic period. This period is characterized by the existence of sedentary societies with a subsistence base that included an agricultural economy complemented by fishing and shellfish collection. The main characteristic of the late Archaic period, however, is the appearance of large-scale public buildings, usually considered of a ritual nature. The size and elaboration of several of these buildings have captured the attention of scholars who seek to define the degree of complexity of the societies that built them.

It is significant that, in most cases, architectural data have been approached from the perspective of construction phenomena. Buildings have often been studied as the result of construction activities that required the recruitment of a labor force far beyond the household level, stressing the correspondence of buildings' scale and complexity with the scale and complexity of the human groups involved in their construction (e.g., Moseley 1975:79–80). This kind of approach was previously applied to the study of the early Formative or Initial period of the Central Andes (ca. 1500–1000 B.C. [e.g., Lanning 1967:94; Pozorski 1987:23]). Despite differences in their elaboration, these proposals resemble the theoretical models proposed by authors like Renfrew (1974) and Abrams (1989). In essence, they stressed the role of building processes under neo-evolutionary schemes like the one proposed by Service (1962).

The social relevance of architectural design has been seldom addressed, with a few notable exceptions. In his study on Huaca de los Reyes, a middle Formative period (1100–800 B.C.) complex, Thomas Pozorski (1982:250–252) notes that the overall plan of the architecture shows a three-level hierarchy that gives evidence of status and ranking through an increasingly restricted access system. Another attempt to understand the logic of architectural design in early buildings has been developed by Jerry Moore (1996:98–167), who applies visual analysis techniques to evaluate the properties of Formative period monuments such as Garagay, Cardal, and Las Haldas in orienting behavior during ritual performances. However, since excavation at these sites has been limited, Moore's analyses must rely on the identification of broad spatial units (e.g., mound summits vs. surrounding open areas), which limits the scope of his conclusions.

In regard to the late Archaic sites, Robert Feldman proposes that buildings at Áspero had an "ever-restricting" access system at their summits (1985:82), which reveals a hierarchical social organization that was not paralleled by contemporary highland sites. Burger (1992:51–52) interprets these design differences in terms of access regulation, with maximization in highland buildings and restriction in the coastal buildings. From another perspective, Moseley (1992:115) sees a difference between more public-oriented rituals in the coastal buildings and more private, small-scale congregations in the highland chambers. Consequently, several scholars have concluded that this difference implies different sociopolitical developments, with coastal societies being larger and more complex than their highland contemporaries (Feldman 1987:13–14; Fung 1988:75–93; see Bonnier 1997, 2007, and Lumbreras 1989:89 for an alternative view). The resulting scenario shows the need to confront these well-known models with new data and comprehensive analyses of other buildings to define the design patterns that characterized late Archaic architecture in the Central Andes.

The Late Archaic Period on the North Central Coast

The increasing prominence of the late Archaic period in the debate on the rise of complexity in the Andes is undoubtedly related to the recent finds at the site of Caral and the surrounding Supe Valley (Shady 1997, 2001, 2006a; Shady and Leyva 2003; Shady et al. 2001), which have brought about a reevaluation of the scale, economy, and regional dynamics of late Archaic societies, particularly on the North Central Coast of Peru. Research in the Supe Valley has documented 17 late Archaic sites with public architecture (Shady et al. 2000). In addition, surveys conducted in the neighboring Fortaleza and Pativilca valleys (Haas and Ruiz 2002; Vega-Centeno 2004; Vega-Centeno et al. 1998) have identified more than 20 contemporary sites. Thus, almost 40 late Archaic major settlements have been identified for the North Central Coast of the Central Andes (Figure 1).

Extensive excavations at the site of Caral have revealed the time depth of the site's occupation (Shady et al. 2001). They have also revealed the

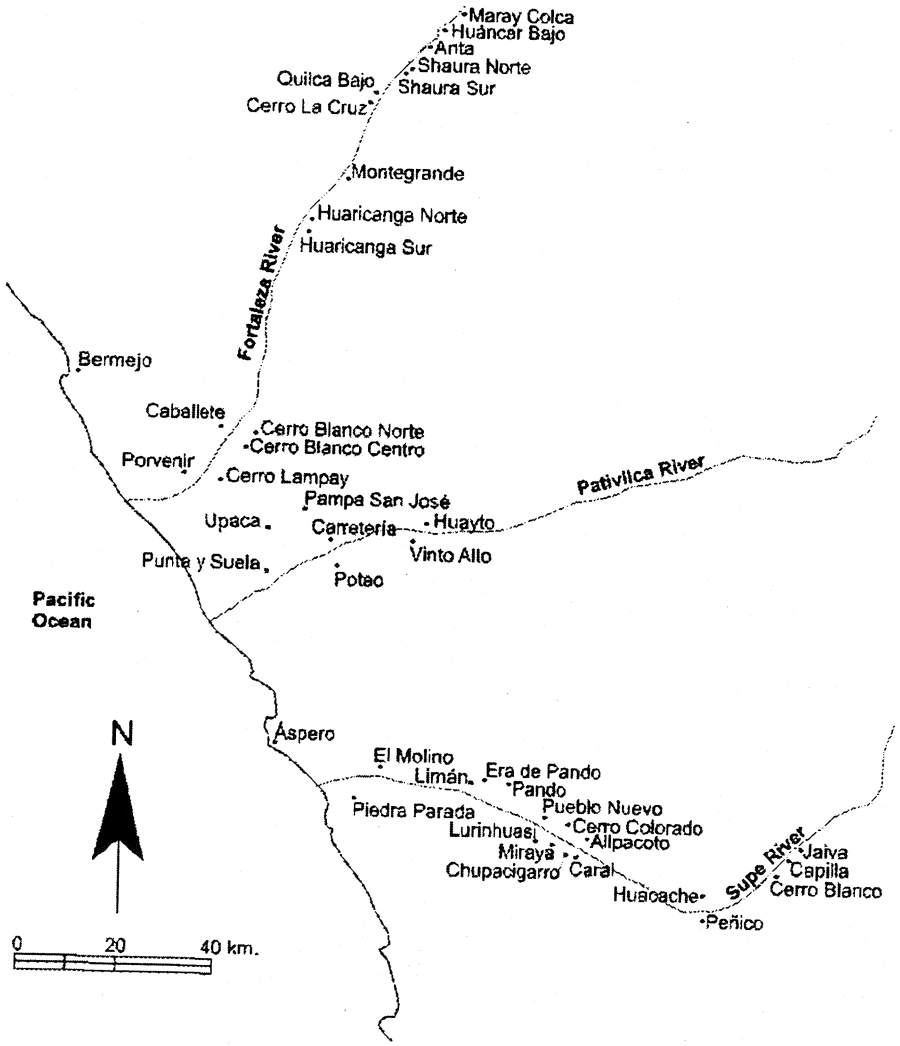


Figure 1. Map of the distribution of Late Archaic sites identified in the Fortaleza, Pativilca and Supe Valleys.

complexity of the construction process and spatial organization of the Caral pyramidal mounds, as well as the existence of residential zones that can be differentiated according to their construction quality and their relation to public spaces (Flores 2006; Shady 2006a, 2006b; Shady and Leyva 2003). Although a detailed report on Caral finds remains to be published, the existing preliminary reports demonstrate the importance and complexity of this large center.

In the neighboring valleys, exploratory excavations have provided a large sample of radiocarbon dates from different sites of the Fortaleza and Pativilca valleys (Haas et al. 2004a). This sample confirms the late Archaic occupation of the settlements and the possibility of long occupational sequences at some of them.

Due to the aforementioned projects, there has been a significant accumulation of new data on the late Archaic period for the region, resulting in a number of associated explanatory models (Haas and Creamer 2006; Haas et al. 2004b; Shady 2006a; Shady et al. 2000; Shady et al. 2001). Shady and her colleagues (2000:26–29) propose the existence of a pristine state that developed in the Supe Valley, with Caral as its capital, while Haas and his colleagues argue for several hierarchically organized polities spread throughout the North Central

Coast (Haas and Creamer 2006; Haas et al. 2004b).

It is important to recognize that these models were based originally on surface observations of the size of public architecture (Haas et al. 2004b; Shady et al. 2000) and have not been significantly modified after excavations (Haas and Creamer 2006; Shady 2006a, 2006b). The models share the assumption that public architecture is a product of centralized decision-making entities and, consequently, the scale of the buildings can be understood as manifestations of centralized and hierarchical societies. While acknowledging the social significance of public architecture within the late Archaic period, the models evaluate architecture in quantitative terms, where volume is used to estimate the amount of labor invested in construction. Based on the assumption that a centralized authority was required for large constructions, these assessments are then used to indicate the scale of the society involved. It is significant that even though there is agreement about the religious or ritual nature of the late Archaic period public buildings, the characteristics of ritual activities have not been considered as relevant for evaluating how complexity developed.

Despite the current reliance on public buildings to explain the nature of late Archaic societies, there is a general lack of detailed analyses on the spatial organization and design of this kind of architecture and the activities that took place within it. As the architectural phenomenon is treated as a simple quantitative index of "degree of complexity," there has been little attempt to obtain detailed accounts on design and construction processes.

To address this lack of attention, I conducted research to reevaluate the role and nature of so-called public architecture during the late Archaic and its sociopolitical relevance. I chose to conduct this research in the Fortaleza Valley, located on the North Central Coast (Vega-Centeno 2004, 2005; Vega-Centeno et al. 1998).

Survey in the Fortaleza Valley revealed the existence of a distinctive architectural pattern of platform mounds and sunken circular courts, which also characterized the late Archaic architecture of the Supe Valley (Shady et al. 2000).[2] Thus, I decided to excavate a site that had both kinds of architectural features in clear association. The chosen site is Cerro Lampay, located on the south bank of the Middle Fortaleza Valley.

Excavations at Cerro Lampay were designed to understand the original architectural design of the building, as well as its transformations through time. They were also designed to account for the nature of the construction processes that took place and the organization of building activities and to recover archaeological remains that would allow the definition of the activities that took place within the built spaces. The recovery of large samples of organic remains for radiocarbon dating was an additional priority to determine the sequence and timing of the building events and their duration within the site's history (Vega-Centeno 2005:121–199).

Cerro Lampay

Cerro Lampay is located on the south bank of the Fortaleza Valley, a narrow, coastal, fertile zone approximately 220 km north of Lima. The site is 2 km from the Fortaleza River and approximately 5 km to the northeast of Paramonga, the district capital (Figure 2).

The site is in a small dry ravine composed of three terraces and cut by several gullies. Soils in the ravine are made up of gravel and silt sediments of colluvial origin. The archaeological zone extends throughout the three terraces and includes a ca. 4-ha late Intermediate period settlement (ca. A.D. 900–1450) in the lower terrace and a 2.4-ha late Archaic period settlement (ca. 3000/2500–1500 B.C.) on the middle and upper terraces.

The late Archaic period settlement includes an architectural complex that is oriented to the northwest with an azimuth of 304°, as well as a ca. 50-x-30-m artificially leveled area located on the upper terrace, approximately 20 m southeast of the architectural complex, that shows a distinctive accumulation of organic refuse (e.g., crushed shellfish) throughout its surface. The architectural complex has a 38-x-31-m and 5-m-high mound and a 47-x-37-m rectangular courtyard. The courtyard includes a 21-m-diameter Sunken Circular Court. There is also a 190-m-long narrow platform oriented to the northeast that separates the complex from the upper terrace (Figures 3–4).

Stratigraphy

Stratigraphy in the platform mound (Figure 5) is characterized by four units. The lowest unit corresponds to sterile soils, over which the architectural

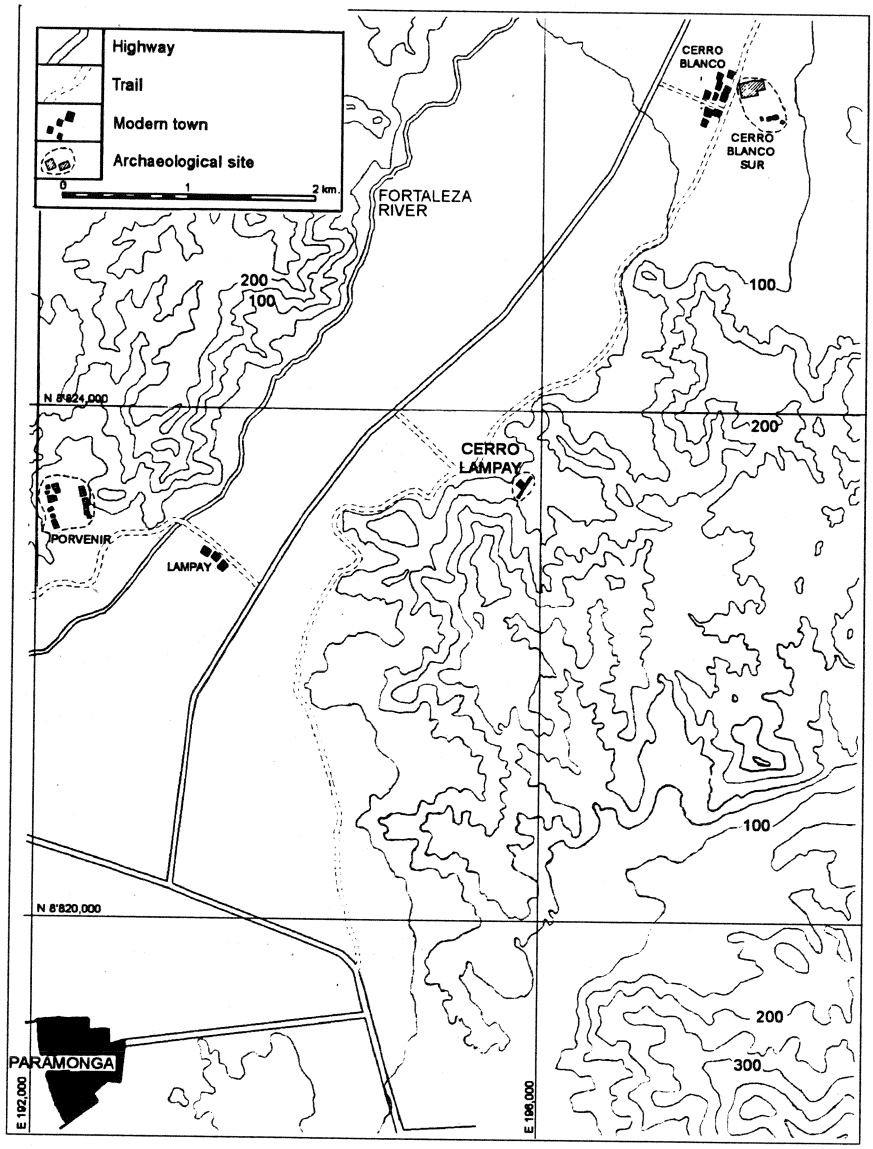


Figure 2. Map of the location of Cerro Lampay in the Fortaleza Valley.

units were built. These soils are composed of compacted gravel and silt deposits that resemble the natural deposits of the ravine in which the archaeological site is placed.

The second stratigraphic unit corresponds to several architectural features built over natural soil, including floors, benches, and walls that gave shape to the original structures of Cerro Lampay. The third stratigraphic unit includes different platforms and fills that covered the architectural spaces of the original structure (Figure 6). Excavations revealed that those fills encompass several stages of a complex process that ended in the "entombment" of the architecture.[3] During the first filling stage, the rear zone of the structure was filled, and an expedient platform was raised with new rooms and benches. Then, during the second filling stage, the entire structure was covered as a single massive platform.

The fourth and last stratigraphic unit consists of three levels of medium- to large-size angular field stones mixed with loose yellow, silty sediments. These levels correspond to postabandonment strata that originated in the weathering and/or collapse of

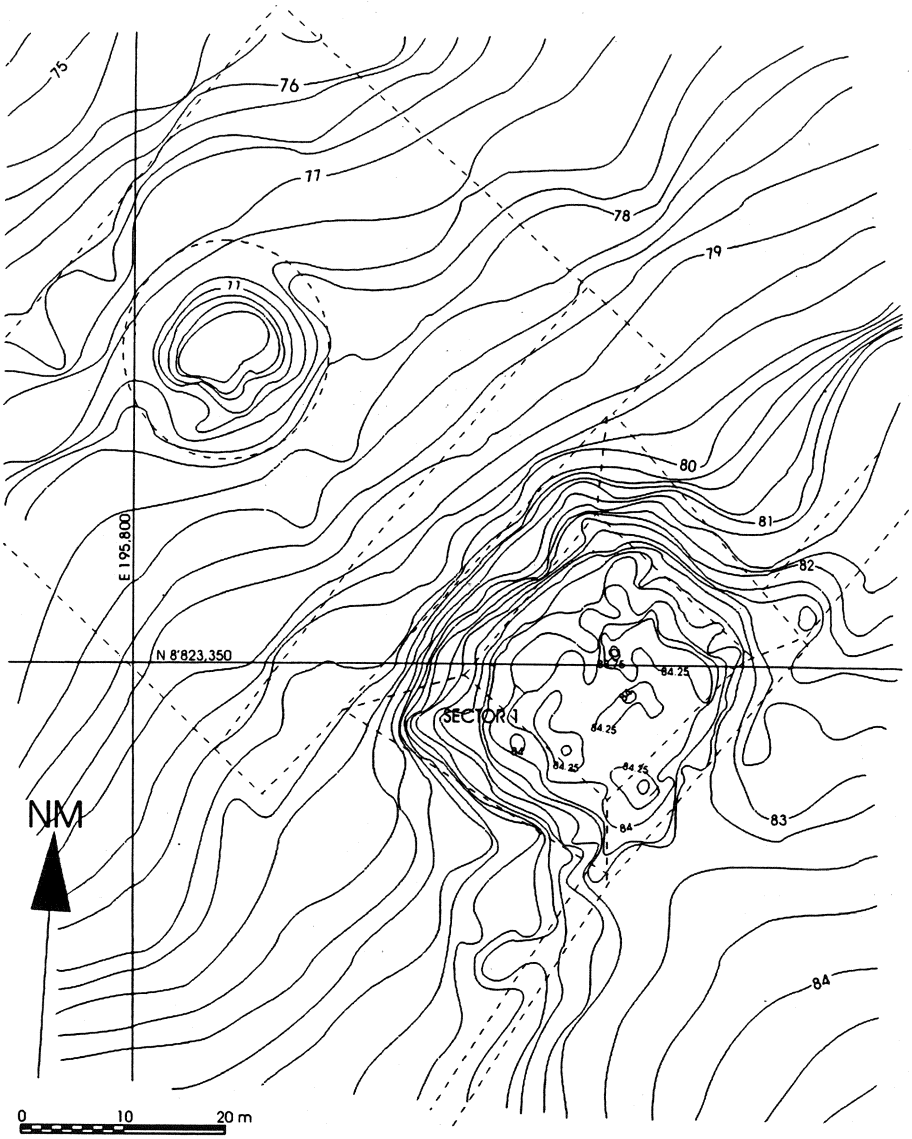


Figure 3. Topographic map of Cerro Lampay before excavations.

the upper architectural features located in the mound.

Stratigraphy in the Sunken Circular Court area (Figure 7a–b) included several postabandonment strata deposited over the court's floor and stairways. Excavations revealed that the court was built after removing approximately 80 cm of soil, which was in part deposited in a 3-m-wide-×-80-cm-high fill that was used to build a platform ring that surrounded the court's edge. This fill contained cultural material such as shell, fish bones, and cotton yarns.

The Original Architectural Structures

Excavations at Cerro Lampay revealed that the architectural complex did not include—at least in its original design—a platform mound but, rather, consisted of two-room structures built over natural soil. They also revealed a sequence of events that were related to the construction, occupation, and abandonment of an architectural complex. This architectural complex appears to be associated with a residential zone, located 20 m southeast of it, where stone alignments suggest the possible location of walls or terraces within a leveled area that

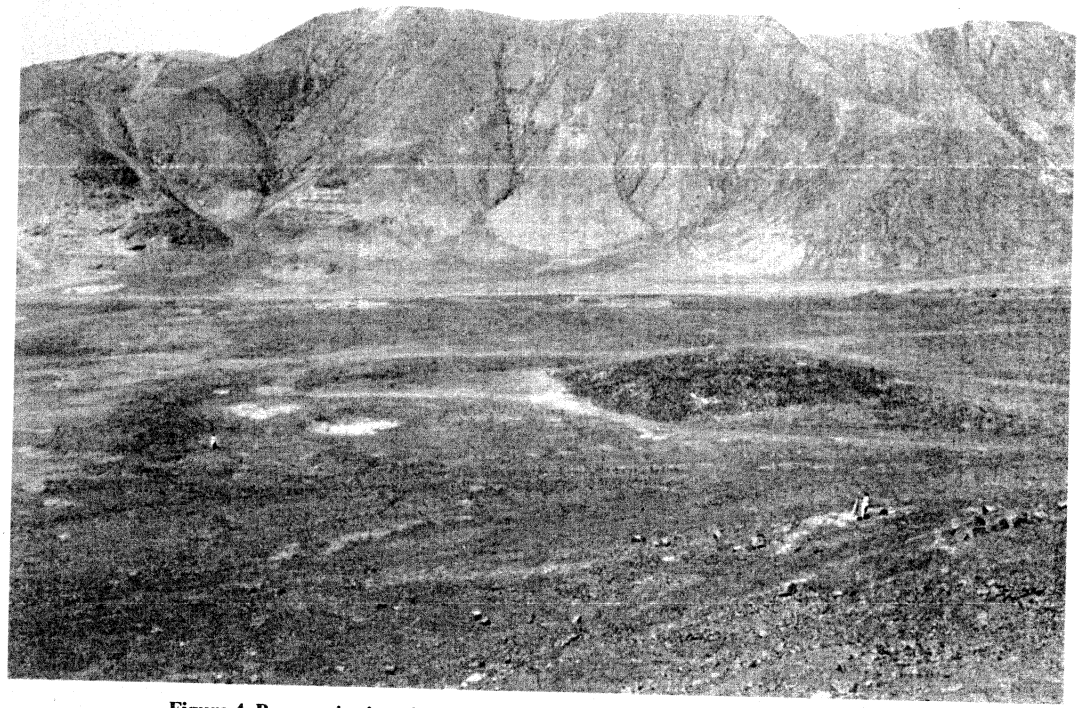


Figure 4. Panoramic view (from West to East) of Cerro Lampay before excavations.

is moderately covered by shell fragments (Vega-Centeno 2005:121–125).

At Cerro Lampay, the original walls were constructed with large- and medium-size (from ca. 60 × 40 to 20 × 15 cm) rocks of irregular shape. These rocks can be found in the surrounding mountains and have an angular breakage pattern. As a result, they usually have flat sides, which were used to form relatively flat wall faces. Stones were placed irregularly and joined with abundant silty mortar. They were finally covered with 1 to 5 cm of plaster.

Within the double-faced walls, there is a core usually formed by mixed gravel, stone, and mortar fill. These walls have various thicknesses (.4, .7, or 1.2 m) and still stand 2.4 to 3.2 m in height. Floors are 3 to 5 cm thick and are made of silty or clayey light gray sediments deposited over sterile soils.

After analyzing stratigraphic relations (e.g., superposition, abutment, etc.) among architectural components such as walls, benches, and stairways, it was possible to establish a growth sequence of the original architecture at Cerro Lampay. The First Structure was followed by the construction of the Sunken Circular Court and, later, the Second Structure.

The First Structure. The first construction at Cerro Lampay is a two-room structure built over the compacted gravel soils of the ravine and oriented to the northwest (azimuth 304° [Figure 8]). These rooms are labeled as Rooms 1 and 2.

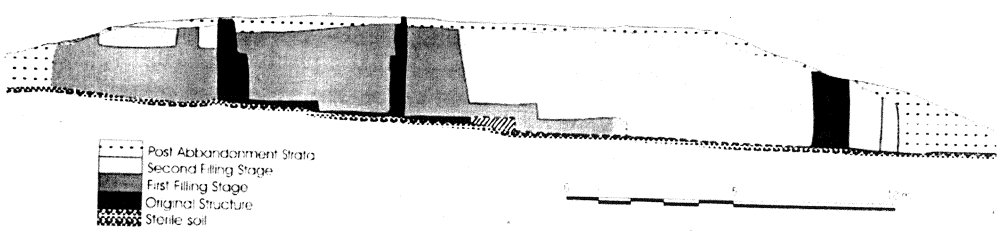


Figure 5. Stratigraphy of the platform mound at Cerro Lampay.

Figure 6. View of construction fill that covered the original architecture.

Room 2 has a 12.2-×-11.4-m inner space, and its walls are 2.4 to 3.2 m high. The northwestern wall is built in a single section, while the lateral walls are composed of at least two sections. The walls of Room 2 show traces of red paint.

The floor plaster is 3 cm thick and was prepared over sterile soil. There is a difference of 85 cm between the identified floor levels at the northwestern and southeastern sides of Room 2. This difference suggests the existence of at least one bench within the unexcavated portion of Room 2. Room 2 has a front, a back (connecting both rooms), and a lateral entryway. The main entry, placed in the northwestern wall, is 2.4 m wide and lacks steps or other access restrictions. Excavations revealed one lateral entryway, in the northeastern wall, which is 85 cm wide. The possible existence of another lateral entryway is suggested by the similarities in design between Rooms 1 and 2.

Room 1 has an 8.7-×-4.4-m inner space that is delimited by walls 2.4 to 2.7 m high. The walls are composed of two to three horizontal sections only seen from the interior (Figure 9).

Room 1 has a 30-cm-high bench oriented northeast–southwest that bisects the room into front and back halves. Both halves have 3- to 5-cm-thick plastered floors prepared over sterile soil, which show few use-related alterations. Room 1 also has four entryways. The main one connects Room 1 with Room 2. It is 1.7 m wide and has a .5-m-high two-sided step. There are also two lateral entryways. The excavated entry is .95 m wide and has a .53-m-high step. Finally, there is a fourth entryway, located in the southeastern wall, approximately 95 cm wide. The walls of Room 1 had traces of a pale yellow paint.

The Sunken Circular Court. A Sunken Circular Court was built approximately 20 m northwest of the First Structure (Figures 7, 10). As seen before, its construction implied the excavation and removal of soils and their partial disposal as a fill that was used to build a platform ring that surrounds the court's edge. The presence of cultural material in the ring fill reveals the disturbance of occupational levels during the court's construction, suggesting that this construction might have been preceded by an earlier occupation. In contrast, the construction of the First Structure over sterile soil suggests an

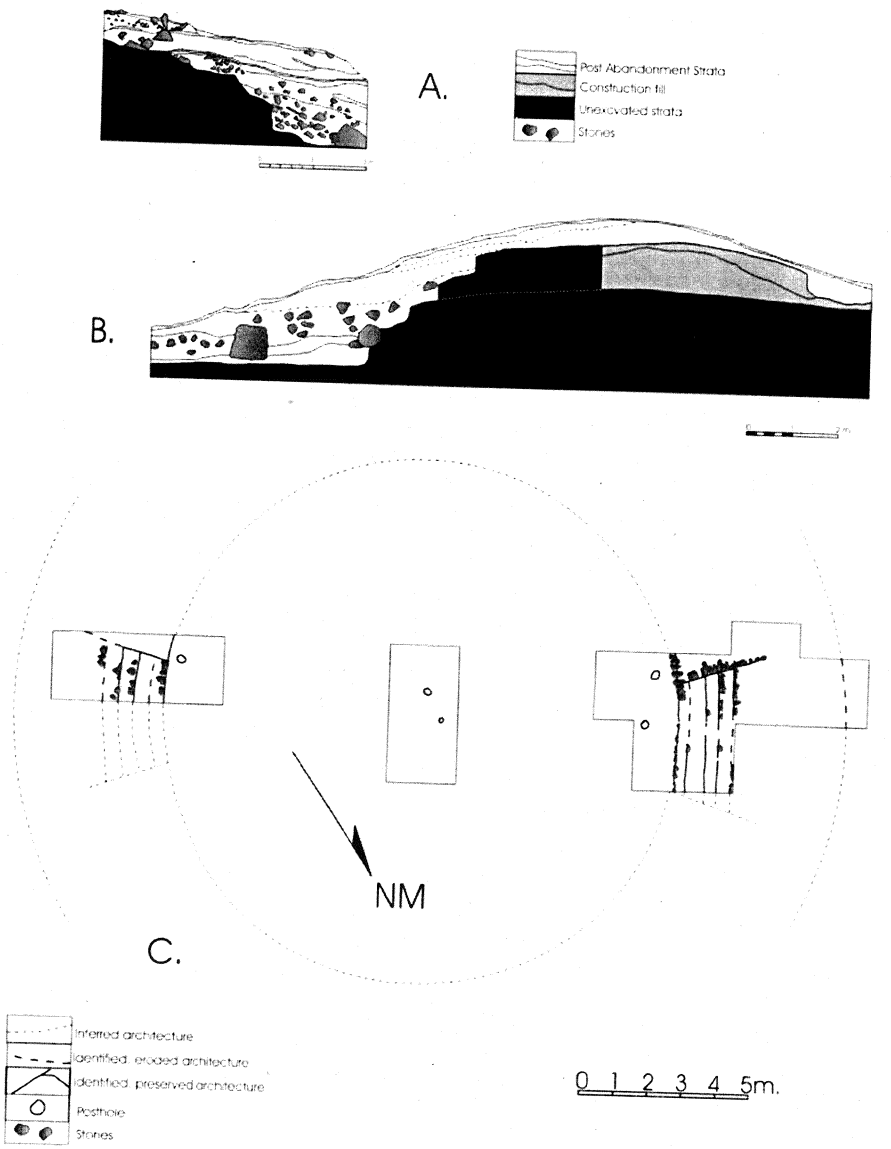


Figure 7. Stratigraphy (A-B) and plan (C) of the excavations at the Sunken Circular Court. A. Southeast access, B. Northwest access.

original, foundational event. Therefore, it is possible that the first architectural project only included the First Structure and that the Sunken Circular Court was built as a later addition. Nevertheless, the general design indicates that both buildings functioned together after the sunken court's construction.

The Sunken Circular Court has an inner diameter of about 15 m, and according to the floor level and ring summit, it might have had a 1.3-m-high inner wall (Figure 7c). The court has two stairways on its northwest and southeast sides, aligned with the First Structure compound's axis. Stairways have a "trapezoidal" shape and are composed of five steps.

The Second Structure. Excavations revealed a second construction project, built at the northeast of the First Structure (Figure 11). Its construction blocked the lateral entryway of Room 2, indicating a spatial reorganization. This new project is

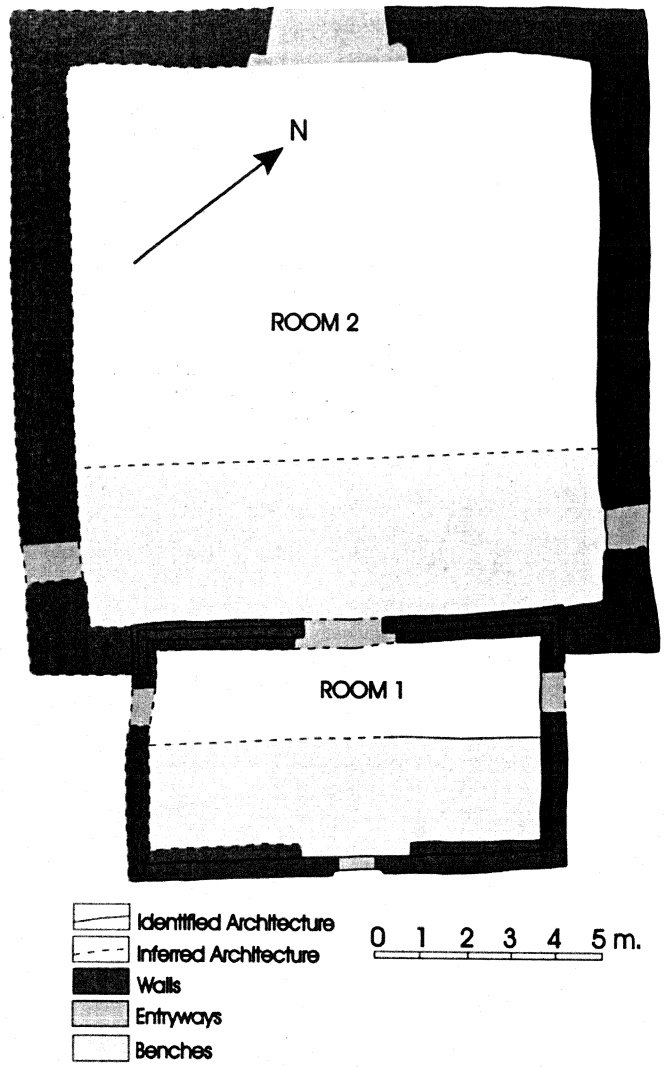


Figure 8. Plan of the First Structure of Cerro Lampay.

named the Second Structure and consists of a two-room compound, oriented to the northwest (azimuth 304°). The rooms of this compound are labeled as Rooms 3 and 4.

While the southwestern part of this structure might have been built over sterile soil, the northeastern one required the construction of a 1-m-high platform, in order to keep the floor level. This platform was also connected to a prepared outer floor, which possibly surrounded both compounds. In addition, a two-section wall was built over this platform, adjacent to the Second Structure compound walls.

Room 3 has a 5.9-×-2-m inner space. Its walls are 2.1 to 2.4 m high. The southeastern and northeastern walls have two sections, while the southwestern wall is shared by Rooms 3 and 4. Finally, the northwestern wall has a single section and is 25 cm thick.

Room 3 has a 40-cm-high bench that bisects the excavated space into a northeastern and a southwestern section. It is possible, however, that this platform only covered the central area of the room. Both sections have plastered floors prepared over a gravel layer deposited over a fill of *shicra* bags. Room 3 also has four entryways. Two entryways are placed at the northwestern wall, connecting this room with Room 4. One entryway is 90 cm wide,

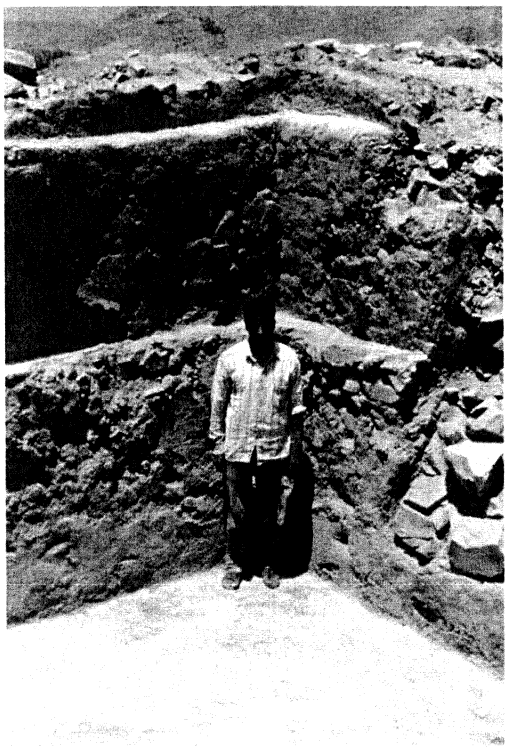


Figure 9. View of the northern corner of Room 1, First Structure.

while the other is only 45 cm wide. There is another 75-cm-wide entryway in the northeastern wall. Finally, a 50-cm-wide entryway is placed in the southeastern wall, with a lintel composed of an *algarrobo* beam.

Room 4 has a 5.9-x-4.1-m inner space. As in Room 3, its walls are 2.1 and 2.4 m high. The northwestern wall has three sections. The northeastern wall was badly eroded, preserving the lower section, which is 1 m high and 70 cm wide. The southwestern wall has two horizontal sections. One section is the continuation of Room 3's southwestern wall, which connects with the northeastern wall of Room 2 of the First Structure. The other section consists of a single-faced wall built over the First Structure's outer face, in order to level the inner wall of Room 4. This wall seems to resemble the three-section structure identified in Room 3.

Room 4 has a 40-cm-high bench that divides the inner space into a small southwestern zone and a large northeastern one. Both zones have plastered floors, possibly of the same characteristics as those of Room 3. This room also has five entryways. The main one is placed in the northwestern wall and is 75 cm wide. The southwestern wall has a narrow 50-cm entryway with a lintel made of two willow (*Salix humboliana*) beams covered with plaster. On the opposite side, the northeastern wall has a 70-cm-wide entryway. Finally, the back zone has the two entryways shared with Room 3. From Room 4, the larger one has a 40-cm-high step.

Three rectangular niches were identified in Room 4. One is placed in the northeastern half of the northwestern wall, while two incomplete niches appear in the northeastern wall. Niches are located at a height of 80 cm and are 40 cm wide, 35 cm high, and 35 cm deep. If the niches have a symmetrical distribution, there might be three more niches in the room's southwestern half.

The Second Structure was the last architectural project built on the northeastern side of the architectural complex of Cerro Lampay. After its construction, the complex acquired its final configuration (Figure 12). Nonetheless, since no extensive excavations were conducted on the southwestern side of the mound, the possibility of other structures at the site cannot be discarded.

Radiocarbon Dating

In order to get a precise idea of Cerro Lampay's chronological position, as well as the length of time between the construction of the original compound and the entombment process, 27 radiocarbon samples recovered from the excavations were analyzed.[4] Five correspond to the original compounds, and 22 correspond to the entombment process.

The resulting ^{14}C dates and their calendar year ranges are displayed in Table 1. With the exception of two samples (AA 58788 and AA 58783), the resulting dates are consistently grouped in a time range between 2400 and 2200 B.C. (Vega-Centeno 2005:189–199). Consequently, it is possible to conclude that Cerro Lampay architecture was in use for approximately two centuries. Apparently, the construction events for the first and second compounds were close in time, and the entombment process was also conducted in a short time span. We can assume that by 2150 B.C., the site was totally abandoned.

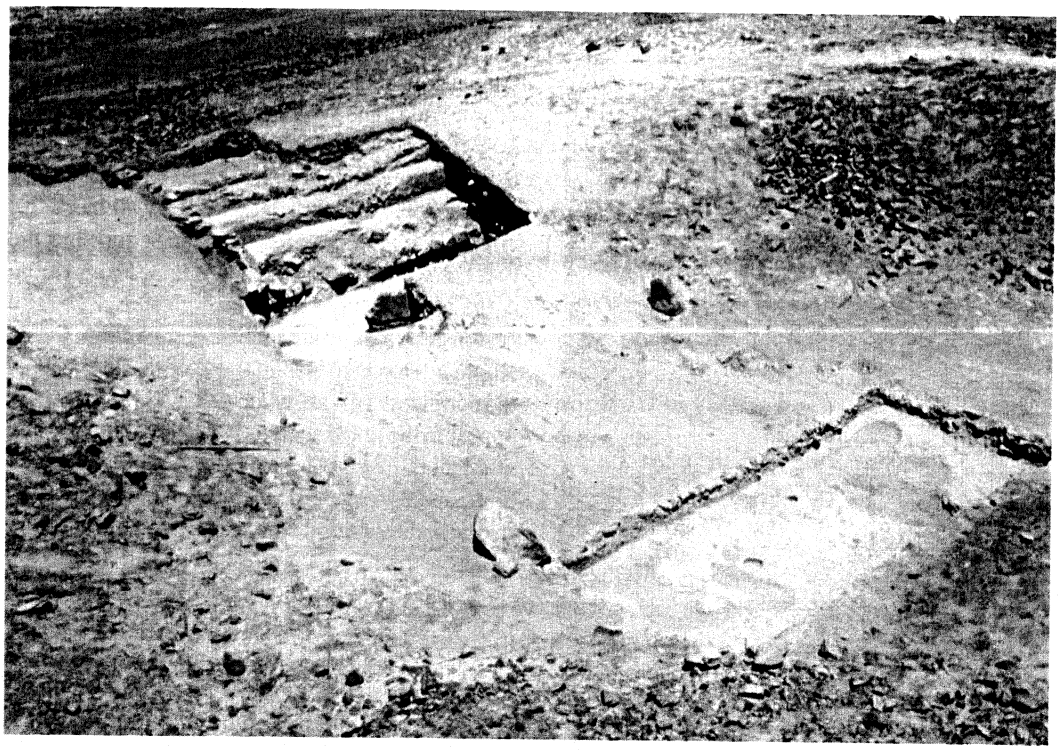


Figure 10. View (from South to North) of excavations in the Sunken Circular Court.

Constructed Space and Human Interaction: Spatial Organization of the First Structure

As noted before, the architectural complex identified at Cerro Lampay was not built in a single event but grew over time, transforming during its development. Each construction stage implied the materialization of a specific design, which might reveal different patterns of human interaction through the built space. Consequently, each architectural design will be analyzed separately; this will be followed by a synthetic view of Cerro Lampay's architecture.

To address the behavioral implications of the First Structure design, the defined spaces and their later additions and transformations will be analyzed through two different approaches. One approach is related to the spatial structure, defined by the number of built spaces and their access system. The second approach is related to the sensorial experience of built spaces and, in particular, to the visual and kinesthetic experience of space.

Spatial Structure and Space Syntax

The spatial structure of the first compound can be addressed using the gamma analysis proposed by Hillier and Hanson (1984). As noted before, the significant variable of this analysis is the degree of permeability among the spaces in a building, which is manifested in four properties: symmetry, asymmetry, distributedness, and nondistributedness. Both sets of properties can also be addressed through specific indexes that measure the relative asymmetry (RA) and relative ringiness (RR) of a given building.

The Carrier Space

Gamma analyses at Cerro Lampay require a previous discussion of the carrier space. According to Hillier and Hanson (1984:66–67), the carrier space is the continuous and infinite space that surrounds the finite spatial units defined by a building. While this concept provides a "container" that allows evaluation of the architectural units within a larger spatial milieu, it presupposes that all the nonbuilt surroundings of such units form part of a plain and undifferentiated landscape. The application of this notion of carrier space might simplify the nature of the space that surrounds the standing architecture at Cerro Lampay. As seen before, Cerro Lampay's buildings stand on a dry ravine, looking to

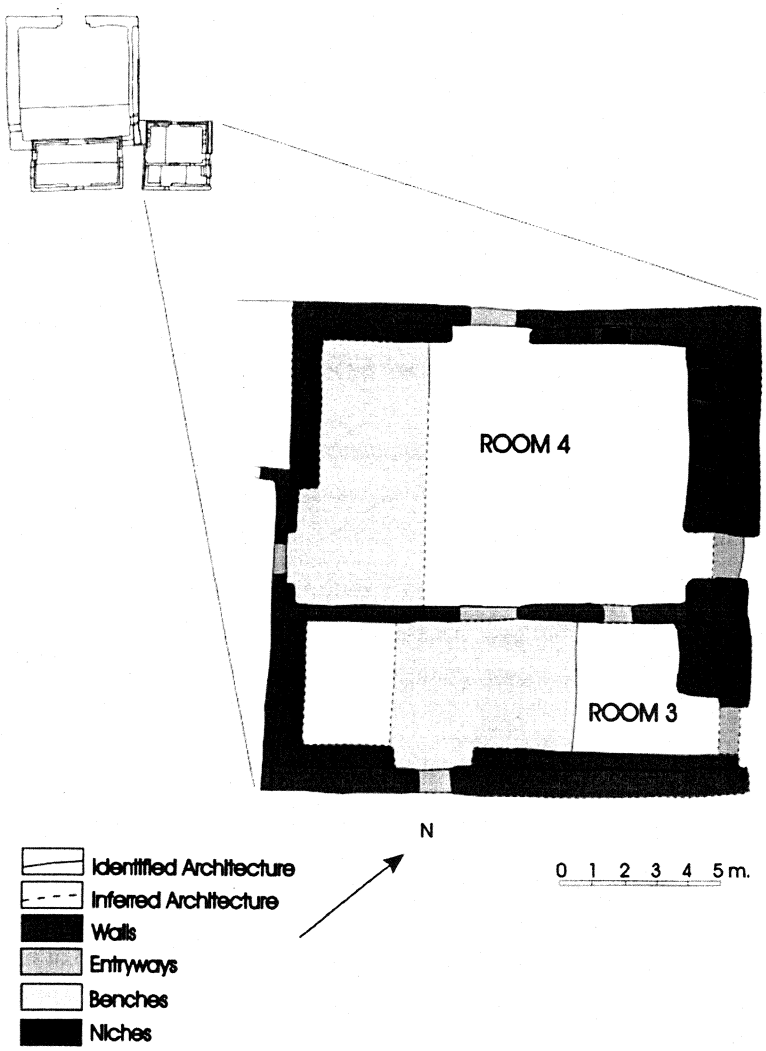


Figure 11. Plan of the Second Structure of Cerro Lampay.

the northwest, toward the valley plain. The mountain ranges that form the ravine appear on its sides, and a residential zone spreads behind the building over a higher terrace that was delimited at a certain moment by a long wall that ran across the ravine.

The location of the residential zone as well as the wall construction suggest that the area behind the architecture was more than just a part of an undifferentiated carrier space. Furthermore, the entryway placed on the southeast side of Room 1 allowed direct access to the First Structure from the residential zone. This articulation between the residential zone and the architectural units strongly suggests that the former was a significant area that might be differentiated from the carrier space.

In addition, if the rear entryway defines a significant area, we can also consider that the lateral entryways in Rooms 1 and 2 might have served to define other areas. The areas that extend on both sides of the structure correspond to ravine sections that are oriented toward the surrounding mountains, featuring a totally different landscape than the one observed toward the valley. The distinction between these areas was enhanced when the square courtyard that surrounded the Sunken Circular Court was delimited and defined the new area in front of the First Structure.

Consequently, for analytical purposes, I evaluate the spatial organization of Cerro Lampay buildings using different scenarios for the carrier space.

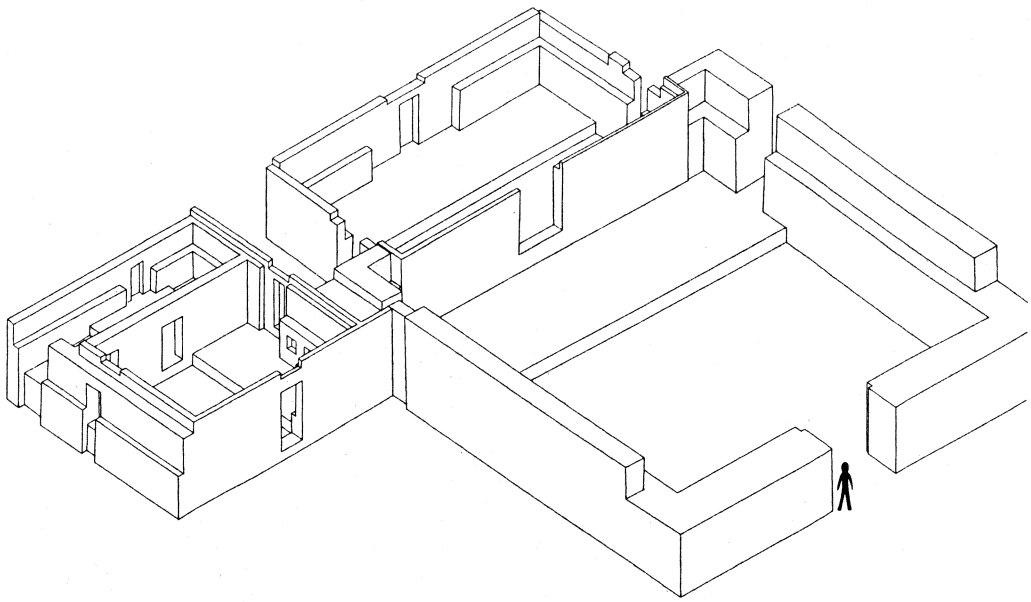


Figure 12. Isometric reconstruction of the original architecture of Cerro Lampay.

In addition to a scenario based on the original definition, I will also consider several scenarios in which the carrier space corresponds basically to the area that extends to the northwest, between the architectural structures and the valley plain. In such scenarios, the areas that spread to the sides and behind the structures can be treated as spaces that need to be differentiated for a gamma analysis.

The First Structure

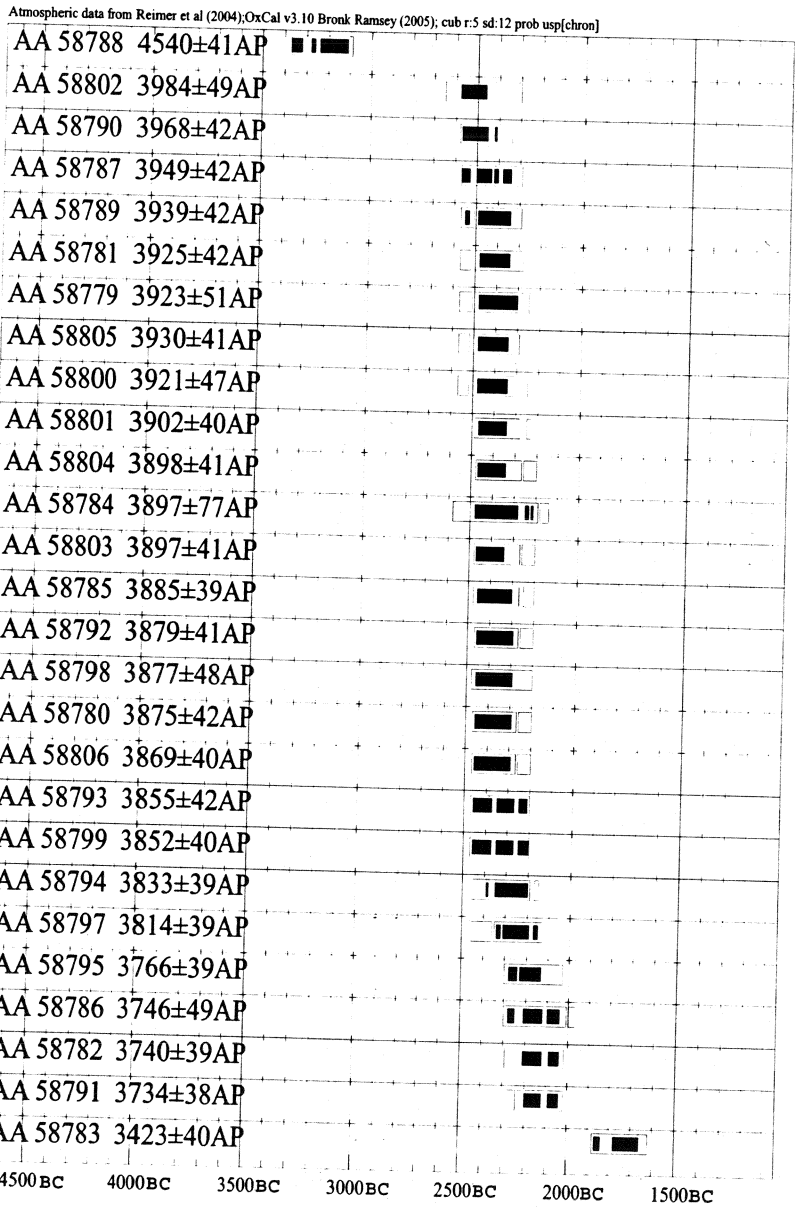
In the previous section, the architecture of the First Structure was described, noting how Room 1 and Room 2 are articulated by several entryways that include both frontal/rear and lateral entryways. Five scenarios are proposed in order to evaluate the spatial organization of the First Structure. One of them (Figure 13a) assumes a surrounding carrier space, while in the other cases the carrier space is restricted to the area in front of the structure. Among these four scenarios, two of them include rear and lateral zones (Figure 13b–c), while the other two assume a subdivision within the lateral zones, according to their articulation with the lateral accesses of Room 1 or 2 (Figure 13d–e). I have also distinguished between scenarios where access from the carrier space to the lateral zones is allowed (Figure 13b, d) or denied (Figure 13c, e).

RA indexes for these scenarios (see Table 2) show a tendency for low to moderate degrees of asymmetry (from .2 to .5), with the exception of the scenario illustrated in Figure 13a that shows a total lack of asymmetry. In contrast, RR indexes show mainly moderate degrees of distributedness (from .54 to .57), with a case of high distributedness (of .85 [see Figure 13b]) and an extremely distributed case (Figure 13a).

The First Structure and the Sunken Circular Court

The building of the sunken court also implies the building of a larger, leveled courtyard, as well as a low platform between the courtyard and the First Structure. As a consequence, a new spatial organization appeared. The new architectural configuration was evaluated through gamma analyses that considered the same five scenarios suggested for the First Structure (Figure 14a–e). As a result, it was possible to note an increase in RA indexes, which ran from .46 to .6, as well as a decrease in RR indexes, now ranging from .38 to .54 (Table 3). Noticeably, the scenario that assumes a surrounding carrier space shows an RA of .1 and an RR of 1.

Table 1. Chronological Distribution of ^{14}C Dates of Samples Taken from Cerro Lampay.



Built Space and Sensory Experience

Human interaction within the built space is determined not only by the boundaries and internal access systems but also by the perceptions generated in the experiencing of space. In archaeological contexts such as Cerro Lampay, the visual and kinesthetic experiences can be feasibly addressed.

The visual experience of the Room 1 space, when accessed from the frontal or the rear entryway, is dominated by the perception of wideness and low depth (Figure 15). In contrast, access from the lateral entryways is dominated by a perception of narrowness and a heightened sense of depth. In addition, the bench that bisects the inner space is low enough (.30 m) to allow passage over it but high enough to provide a perception of elevation or depression, according to the viewer's position.

In terms of kinesthetic experience, the frontal access of Room 1 is wide enough (1.7 m) to allow easy displacement toward the inner space. The lat-

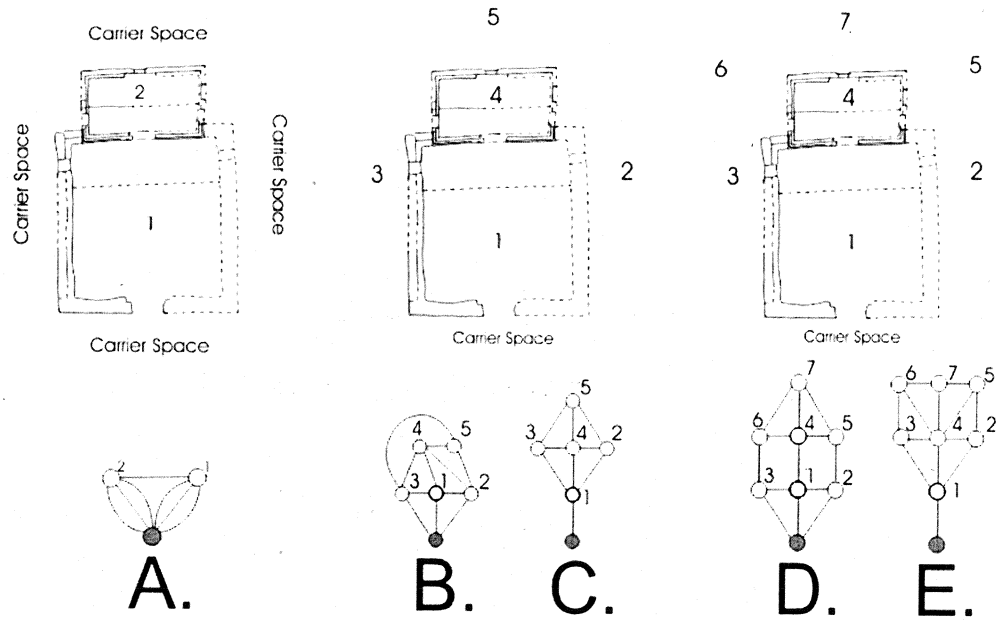


Figure 13. First Structure of Cerro Lampay and Gamma-analyses assuming alternative scenarios for the carrier space.

eral and rear accesses are considerably narrower (.95 m), suggesting a more restricted flow; access width does not seem to appear as a significant element for displacement restrictions. In contrast, it is significant that frontal and lateral accesses are associated with .5-m-high steps, which could also exist in the rear entryway. They contrast with common steps, which tend to be .2 to .3 m high in order to facilitate human displacement. Consequently, the particular height of the entryways' steps seems to have been deliberately designed to restrict the access through a physical constraint on human movement.

Due to its square plan, the visual structure of Room 2 provides a more balanced experience of width and depth (Figure 16), which might have been complemented by the perception of elevated or depressed plans, through one or more benches. The increase of depth experience from the frontal access is also enhanced by the more distant location of the lateral entryways, which are closer to the rear wall. Within Room 2, Room 1 becomes a distant, rear zone, which also can be distinguished through color, as Room 1 was painted with yellow pigments and Room 2's walls were painted with red ones. It is also noteworthy that the frontal access for Room 2 is wider (2.4 m) and has no steps or other kinds of physical constraints on displacement.

The addition of the Sunken Circular Court area enhances the perception of depth within the compound through the alignment of the front and rear court stairways with Room 2's frontal access, which forms a visual central axis (Figure 17). From this axis, other spaces are also included, as Room 2's frontal access is wide enough to allow the perception of Room 1's frontal access and some of its inner space. In contrast, the lateral entryways of both Room 1 and Room 2 are not perceived from the axis. Consequently, the visual structure perceived from the sunken court outlines the unity of the compound, within a deep and centralized space.

Changes and Continuities with the Construction of the Second Structure

The Second Structure addition implies the disuse of lateral entryways in Room 2. In addition, spatial organization became more complex, with the addition of new rooms and lateral terraces.

Table 2. Gamma-Analyses Results for the First Structure of Cerro Lampay.

	Alternative scenarios				
Spatial Units	A	B	C	D	E
Carrier	0	0	0	0	0
1	1	1	1	1	1
2	1	1	2	1	2
3		1	2	1	2
4		2	2	2	2
5		2	3	2	3
6				2	3
7				3	3
Mean depth	1	1.4	2	1.7143	2.2857
RA	0	.2	.5	.2381	.4286
# of Rings	5	6	4	6	6
RR	5	.8571	.5714	.5455	.5455

Gamma analyses were applied to the whole complex with the Second Structure, including the same possible scenarios for exterior subdivisions considered for the First Structure (Figure 18). Analyses show that the scenarios with the Second Structure have lower RA indexes than the scenarios with the First Structure alone (including the Sunken Circular Court). In contrast, RR indexes are very similar for both scenarios (Table 4).

These contrasting developments toward horizontality and verticality can also be observed through analyses of the visual and kinesthetic realms. In contrast to the perception of unity and centrality that the First Structure offered from the Sunken Circular Court, the addition of the Second Structure demarcates a distinction of a central structure and another, lateral one. In this way, it is possible that the suggested lateral spaces that surround the original structure became more explicit.

While lateral spaces acquired more significance in the overall organization, the structures' inner space reduced the importance of lateral interaction.

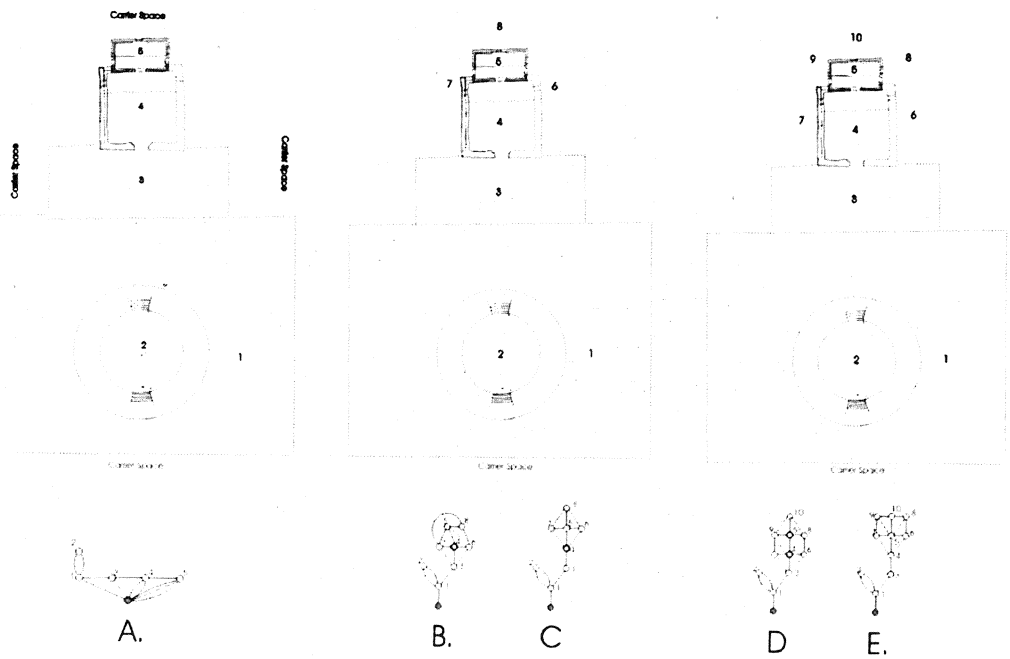


Figure 14. First Structure and Sunken Circular Court of Cerro Lampay with Gamma-analyses assuming alternative scenarios for the carrier space.

Table 3. Gamma-Analysis Results for the Original Architecture of Cerro Lampay.

	Alternative scenarios				
Spatial Units	A	B	C	D	E
Carrier	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	1	2	2	2	2
4	1	3	3	3	3
5	1	4	4	4	4
6		3	4	3	4
7		3	4	3	4
8		4	5	4	5
9				4	5
10				5	5
Mean depth	1.2	2.75	3.125	3.1	3.5
RA	.1	.5	.607	.4667	.5556
# of Rings	7	7	5	7	7
RR	1	.538	.385	.4118	.4118

The cancellation of lateral accesses in Room 2 was reproduced, in a certain way, in the design of lateral entryways to Room 3. The southwest entryway was 1.5 m high and .5 m wide, also having a .5-m-high step. Both its size and its location imply several constraints for physical displacement. In the case of the northeast entryway, the access is even more difficult, as Room 3 stands over a 1-m-high platform and no stairway exists to reach the entryway's floor. Therefore, kinesthetic constraints seem to suggest that lateral entryways in Room 3 might have had little flow or movement, and they were perhaps just symbolic devices that retained former organizational patterns. Apparently, the increased horizontal differentiation of main spaces, followed by a more centralized inner organization of such spaces, was the consequence of the addition of the Second Structure.

Cerro Lampay's Design: Behavioral and Social Implications

The above analyses set the stage to evaluate the role of Cerro Lampay's architecture in the interaction that took place between its facilities and those who used them. This interaction was manifested in different activities in which the scale, intensity, and nature of individuals' participation reflected and reinforced social identities and social relations (Kertzer 1988; Rappaport 1999; Turner 1969). While it is obvious that one cannot reconstruct the whole set of activities conducted at Cerro Lampay, the architectural design allows definition of at least two spheres of human activities. One is related to the movement between spaces and the possibilities of moving to and from certain areas. The other is related to the possibilities of movement and positioning within a certain space. Both spheres provide information on the scale and degree of differentiation among the participants in an activity and their interaction.

In regard to the movement and accessibility

Table 4. Gamma-Analysis Results for First and Second Structure on Cerro Lampay.

	Complex with second structure		
Spatial Units	a	b	c
Carrier	0	0	0
1	1	1	1
2	2	2	2
3	1	2	2
4	1	3	3
5	1	3	3
6	1	3	3
7	1	4	4
8		4	4
9		5	5
10		5	5
11		4	4
12		4	4
13			5
Mean depth	1.142857143	3.333333333	3.461538462
RA	0.071428571	0.466666667	0.447552448
Number of rings	9	8	9
RR	0.818181818	.0.380952381	0.391304348

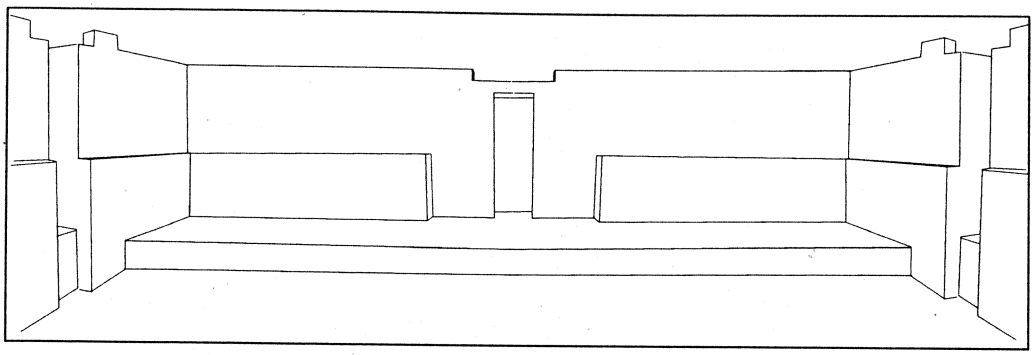


Figure 15. Hypothetical perspective view of Room 1 from the front access.

between spaces, gamma analyses reveal that the original design of Cerro Lampay architecture had a low degree of spatial hierarchy and centralization in its access system. The existence of lateral entryways, as alternative paths to entryways located on a central axis, is a major factor for such a situation.

As seen before, Room 1 has an access system with four different and alternative entryways. Rather than a random, nonregulated access system, this system seems to be a device to differentiate groups of participants, according to the entryway they use to enter or exit Room 1. Entryways can only bring participants into two inner subspaces: the upper plane defined by the bench or the lower plane in front of the bench. Only those entering Room 1 through the rear entryway were directly on the bench plane, while the lateral and frontal entryways conduct to the lower plane. Therefore, the location of entryways leading toward different planes might indicate a vertical differentiation among participants, while the alternative entryways for the same plane reinforce the existence of horizontal distinctions in the same scenario.

In addition, Room 1 seems to have been a highly significant space, which implies devices for restricting access, with high steps that provided the experience of a dramatic spatial displacement from outside to inside. Inside the room, the wide visual structure might have oriented individuals to standing positions (unlike deep visual structures that invite frontward movement), possibly promoting a

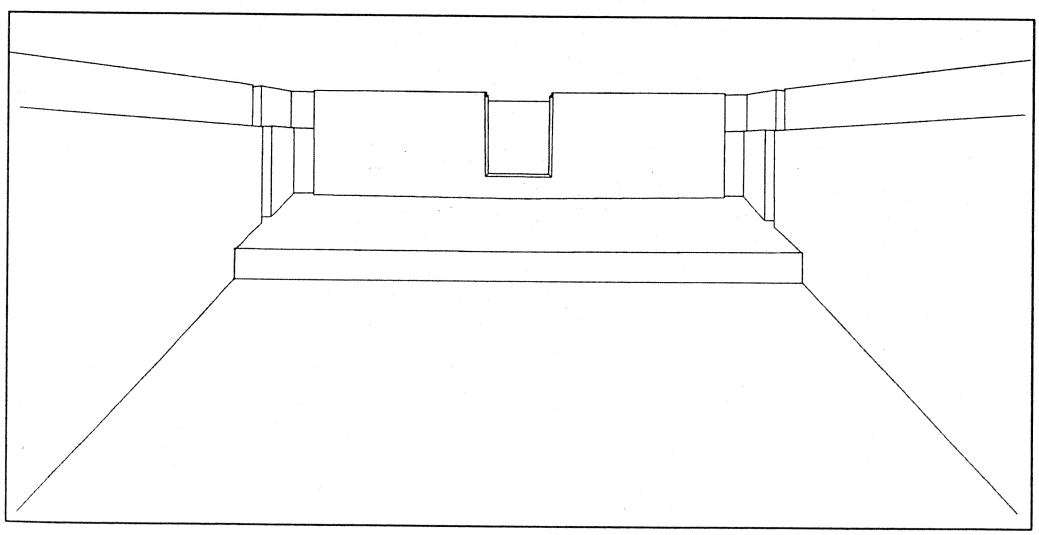


Figure 16. Hypothetical perspective view of Room 2 from the front access.

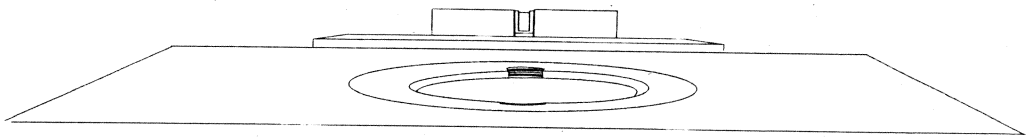


Figure 17. Hypothetical perspective view of the First Structure from the Northwest.

close face-to-face relation between individuals above and below the bench.

Both horizontal and vertical differentiations seem to be reproduced in Room 2's design, as is also suggested by gamma analyses. Nevertheless, there is a significant differentiation in the location of lateral entryways, which are closer to the rear entryway. Furthermore, according to the inferred floor levels, the rear and lateral entryways might have been at an upper plane in relation to the frontal entryway. In addition, the size and shape of Room 2 increase the distance between the front entryway and the other ones. Thus, several devices reinforce the separation of the frontal zone of Room 2, reached from the front access, and the rear zone associated with the lateral entryways and Room 1 access.

This separation might have enhanced the distinction between those participants who could reach the rear zone and those who could not. Moreover, the square shape of Room 2 provides a more neutral scenario for standing or moving. Therefore, it seems to have been designed for a different set of activities, probably involving more movement and a larger number of individuals than those who could get into Room 1. It is noteworthy that no specific devices constrained the movement through Room 2's front entryway, and no recognizable physical remains of barriers were recorded. This suggests that Room 2 was a less restricted space than Room 1.

If the Sunken Circular Court area was added to the First Structure in a second construction stage, it would imply that important changes took place in the nature of participation within the architectural space. As gamma analysis indicates, its presence increased the hierarchy and centrality of the spatial structure, particularly for those who entered the compound from the carrier space. Its access system oriented participants toward a central axis, without lateral alternatives, providing only a vertical distinction. Furthermore, horizontal distinctions that existed within the structure could not be appreciated from the outside. It seems that such distinctions only worked inside the structure but not within the Sunken Circular Court area.

In sum, the original architecture of Cerro Lampay consisted of three different spatial spheres, probably built during a short-term sequence, which involved not only different numbers of participants but also different degrees of vertical and horizontal differentiation among them, as well as different sets of activities. The articulation of different spaces suggests that participants were divided into subgroups as they entered different spheres. Thus, after certain activities were conducted in the Sunken Circular Court, a subgroup was able to access the First Structure through Room 2's main access. Other subgroups might have entered the same room through the lateral entryways. Inside Room 2, specific activities might have taken place, including the movement toward the rear zone to get into Room 1. Room 1 could also be reached by two other groups using the lateral entryways and a final group entering through the rear entryway. Then, the room's size and shape oriented a face-to-face standing position of participants for the conduct of another set of activities.

According to gamma analyses, the architectural changes produced by the building of the Second Structure involved an increased centralization in the access systems within compounds but a less hierarchical organization of the overall architecture. Both the First and Second structures' facades and entryways could be observed and reached from the Sunken Circular Court area, but lateral entryways were hard to reach, when still in use, in the compounds' front rooms (i.e., Rooms 2 and 4).

These changes can be understood as the shift of horizontal differentiation devices to a more visible area. Such a shift indicates new dynamics in the nature of individuals' participation while passing through the Sunken Circular Court area, with alter-

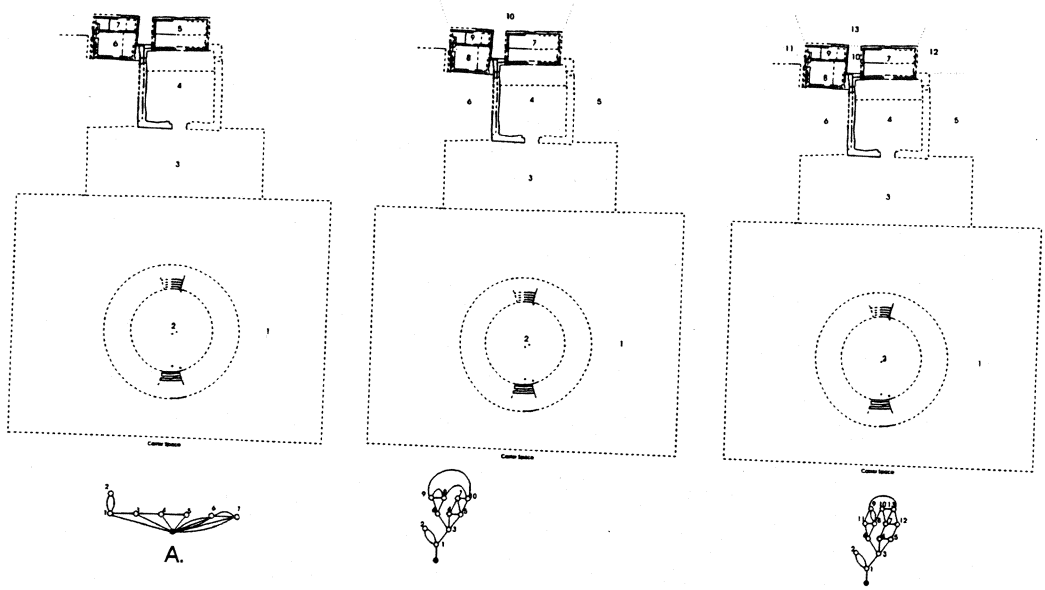


Figure 18. Cerro Lampay architecture with Second Structure addition and Gamma-analyses.

native pathways toward the First and Second structures, where, in contrast, horizontal differentiation devices were reduced through abandoning lateral entryways or transforming them into mere figurative or symbolic elements. Thus, the former horizontal differentiation among individuals seems to have been transferred to more open, public spaces, a change that might imply a different organization of the activities conducted within rooms and courtyards.

As discussed above, Cerro Lampay architecture is located within a ravine, limited by mountain ranges on its lateral sides, while its frontal zone faces the Fortaleza Valley floodplain. It is also closely related to the residential zone, placed behind Room 1. Furthermore, there is a direct connection between the Room 1 rear entryway and this domestic zone. These characteristics cast doubt on the applicability of the notion of carrier space—understood as an undifferentiated surrounding landscape—for gamma analysis and suggest the possibility of alternative scenarios, where the carrier space was differentiated from nonbuilt areas that, according to the relation to social or natural landmarks, might have acquired specific significance.

One possibility is that the inclusion of several entryways within Cerro Lampay structures was related to differential access patterns for two possible kinds of participants: the local inhabitants of Cerro Lampay's ravine, who were able to access the buildings from the rear entryways, and the inhabitants of other settlements from outside the ravine, who could come from the valley floor or even farther and faced the frontal zone, with the sunken court and the frontal access of Room 2.

I propose that this distinction between participants fits the inferred vertical differentiation outlined by gamma analyses. In addition, the repetitive horizontal differentiation in access systems for Rooms 1 and 2, with a decrease of such differentiation as one moves toward the sunken court, suggests that these spaces were more related to the local participants than to outsiders. It is noteworthy that such differentiations started with devices placed within the rooms of the First Structure and then acquired more visible manifestations through the construction of the Second Structure. In both cases, the Sunken Circular Court appeared as the first architectural space for outsiders, with a consistent structure of unity and centralization.

Room 1 is the spatial unit most intimately related to the local sphere. As noted above, it outlines not only horizontal distinctions but also vertical ones according to the displacement and location of participants. These distinctions suggest the existence

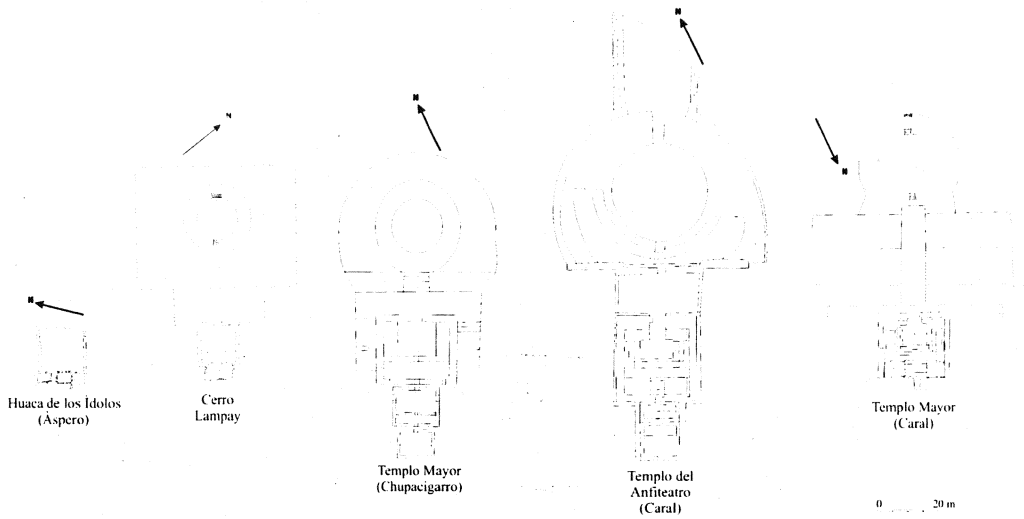


Figure 19. Comparative chart of architectural compounds of the North Central Coast.

of heterogeneity within the local group. Nonetheless, the patterns of congregation activities performed in the structures show a contrasting scenario, in which unity and homogeneity were reinforced for outsiders while horizontal differentiation was outlined for local members. Such behavior can be representative of a community, understood as an ever-emergent social institution that generates and is generated by suprahousehold interactions that are structured and synchronized by a set of places within a particular span of time (Yaeger and Canuto 2000:5).

As a community, Cerro Lampay inhabitants might have built a ritual facility in order to host and interact with neighboring communities. Such a facility displayed to outsiders the idea of unity and homogeneity held by residents of Cerro Lampay. At the same time, the facility provided spatial devices to outline horizontal and vertical differentiation among the community members. It is significant that devices such as paired entryways suggest that participants were organized into halves for accessing the rooms. If ritual organization reproduced social organization, these devices suggest that the community might have had a dual structure.

It is significant that dual devices always appear as attachments to a central, unitary or "consensual" space, as the lateral entryways complement the front/back entryways that constitute the central axis of the complex. This pattern suggests that the architectural design expressed the idea of communal unity while including devices to denote divisions within the whole.

It is important to note that, due to its polysemic nature, dualism needs to be evaluated within the specific behavioral contexts in which it appears, before assuming broad social implications of its presence. In the case of Cerro Lampay, dualism seems to appear within ritual performances, in what seems to be the statement of participants' social status or position. Thus, it appears to be strongly related to self-referential messages about individuals' membership, but the significance of dualism in other dimensions of the Cerro Lampay community's life still remains to be evaluated.

For the moment, based on the architectural design of Cerro Lampay structures, I propose that the social group that built and used such structures constituted a self-identified community with an emergent leadership and an internal division that suggest a dual organization during ritual performances. The possible existence of a dual organization within the Cerro Lampay community is particularly significant because it may imply a particular scenario for the emergence of leaders, power positions, and centralization. It is well known that the ritual roles played within a dual structure usually imply competition and cooperation scenarios among the involved groups and their leaders. More-

over, dualism is usually a mechanism that regulates and controls the centralization of power and wealth within communities.

A Regional Perspective

To evaluate the social scenario inferred from Cerro Lampay within a regional context, it is important to assess whether the architectural design defined at Cerro Lampay, a two-room structure with multiple entryways, corresponds to a broader architectural tradition within the late Archaic occupations of the Peruvian North Central Coast. Unfortunately, although there are some 30 late Archaic sites with public architecture in the Fortaleza, Pativilca, and Supe valleys that can be related to Cerro Lampay, most of them remain unexcavated, and surface evidence is in most cases insufficient for comparative analyses. Information on architecture from excavation is available for the sites of Áspero, Chupacigarro, and Caral, all in the Supe Valley.

Áspero

The Áspero settlement spreads over 13.2 ha and is composed of an extensive midden area interrupted by at least six major platform mounds (Moseley and Willey 1973:460). Excavations were conducted in three of these mounds by Robert Feldman (1980), who reported significant results for the mounds named Huaca de los Ídolos and Huaca de los Sacrificios.

A main feature of Huaca de los Ídolos's design is the presence of three rooms with shared walls and independent, east-oriented entryways. The stratigraphic correlation of these rooms with other architectural features is difficult to establish due to limited excavations beyond the rooms themselves (Feldman 1980:79). The most significant feature is a set of 2.25-m-high walls defined as "D" walls, which had foundations built at the same level as the lower floor of Room 3-5 (Feldman 1980:79–81). These walls form a 13.6-×-13.4-m courtyard, with a 2.5-m-wide central access and two narrower, lateral entryways.

Feldman's (1980:80) excavations revealed the existence of several cross walls between the courtyard access and Room 3-5. However, it is not clear if the foundations of these walls lay at the same floor level as the original Room 3-5 or the large room walls. By assuming that they corresponded to the original design, Feldman (1980:82, 107) considers that access to the central rooms showed highly controlled admittance through a "circuitous route," as presented in his isometric reconstruction.

By contrast, if we consider the possibility that those walls were later additions, the original architectural design appears as containing a front, large room with three entryways, associated with three rooms and perhaps only one at the beginning. The overall structure may have covered a ca. 19-×-15-m area.

Chupacigarro

The site of Chupacigarro, formerly known as Chupacigarro Centro (Williams and Merino 1979:209–210), is a 9.4-ha settlement composed of several platform mounds. The largest architectural complex has been named the "Templo Mayor" and is composed of several rooms, recently excavated by a team directed by Ruth Shady (2001:13–15). As of yet, no complete report on the Chupacigarro excavations has been published. Nevertheless, an approximate idea of its architectural design can be inferred from brief reports and a scale model prepared by the Archaeology Museum of San Marcos University (Shady 2001:15, 2006:56–57).

At the complex's southern extreme, there is a rectangular room with a bench that divides the inner space into a southern and a northern half. Another structure was built in front of this room and is divided by a central bench. There is a third large room, which is also divided by a wall into a rear and a front space. The rear area is a narrow room with one front entryway, two lateral entryways, and three back entryways. The front area has lateral benches and, apparently, only a front and a back entryway. A circular fire pit was placed in the middle of this room. There is a third section composed of a long platform that connects the compounds to a sunken circular court (Shady 2001:15; Shady et al. 2000:36; Williams and Merino 1979:209–210).

Caral

Caral (formerly Chupacigarro Grande) is one of the largest late Archaic settlements in the Supe Valley, with seven major platform mounds and several minor compounds spread throughout a 58-ha area. Excavations conducted by Ruth Shady (2001,

2006; Shady and Leyva 2003) have provided important data on Caral architecture and particularly on three buildings: the Templo de la Banqueta, the Templo del Anfiteatro, and the Pirámide Mayor.

At the Templo de la Banqueta, excavations revealed a small two-room structure associated with two rectangular courts. The structure covers a ca. 6-x-6-m area and is also composed of a rear and a front room. The front room had frontal, lateral, and rear entryways. The rear room has a central bench and a thinner wall section at the center of the back wall, as well as a false entryway (Shady 1997:39–40, 2001:23–24).

The Templo del Anfiteatro is the most prominent building of the southern sector of the Caral complex, having the largest sunken circular court at the site. This court has two stairways, one of which connects it to the central structure at the back zone (Shady 2001:18–19; Shady et al. 2003a:Figure 1).

The central structure at the Templo del Anfiteatro has a rear and a front room. Nevertheless, in contrast to other buildings, the connection between these rooms includes a stairway, because of the rear room's higher location. Excavations within the front room revealed several construction levels. During the last construction stage, the room had a ca. 20-x-20-m area and included at least three low platforms or benches of a U-shaped form. There is a circular fire pit at the center of the front room, close to the room's frontal access (Shady 2001:20; Shady et al. 2003b:Figure 1).

The Pirámide Mayor of Caral is the largest building in the northern half of the settlement. It is composed of a 20-m-high stepped platform associated with a sunken circular court (Shady 2001:25–27, 2006a:37–39). Excavations at the platform summit revealed a complex set of rooms and entryways that are only partially understood (Shady 2001:25–27; Shady and Machacuay 2003). There is a room at the center of the summit, ca. 9 × 5 m, with niches in its walls (Shady 2001:27). In front of this room, an 18-x-17-m room defined as an "atrium" (Shady and Machacuay 2003:Figure 2) was built facing a large stairway that connects the pyramid's summit with its base. It also has lateral entryways, as well as a back entryway. Its inner space is divided into several levels through the construction of at least five low platforms or benches built in a U-shaped plan around a fire pit area. The summit was connected to the ground via a 9-m-wide and 18-m-high stairway, which reaches the sunken circular court after a 30-m drop (Shady 2001:26).

Architectural Patterns and Traditions

The prior review reveals that the architectural design identified in Cerro Lampay structures can also be identified in sites of the Supe Valley (Figure 19). Arrangements like the one identified at the First Structure of Cerro Lampay (CL1) appear at Huaca de los Ídolos (A-HI) and Huaca de los Sacrificios (A-HS) at the site of Áspero. Similarly, they appear at Chupacigarro (Ch) and at the Templo del Anfiteatro (C-TA) and the Pirámide Mayor (C-TM) of Caral.

The sizes and proportions of the rear rooms are quite similar within these structures (see Table 5). They frequently include benches that divide the inner space into halves (CL1, A-HI, Ch, C-TA) and can have more than one entryway (CL1, Ch).

Front courts also show regularity in their proportions, as square spaces. Their size, however, can vary significantly. They always have a front and a back entryway and frequently show lateral entryways (CL1, A-HI, A-HS, Ch, C-TM). Their floors are seldom uniform and include back and lateral benches. They tend to have a circular fire pit located close to the front entryway (A-HS, Ch, C-TA, C-TM). In the case of the largest rooms, inner platforms are arranged in a U-shaped plan, surrounding the central front area and the fire pit (Ch, C-TA, C-TM).

Buildings that resemble the Second Structure of Cerro Lampay (CL2) appear at A-HI and Ch, as well as at the Templo de la Banqueta (C-TB) of Caral. These structures show similar scale and proportions (Table 6), with the exception of one structure at Chupacigarro, which is significantly larger and seems to have been a former "front court," subdivided into two areas in a later building stage. The structures of this type can have multiple entryways (CL2, Ch, C-TB). They can also show niches in their walls (CL2, A-HI) and benches that divide the inner space (CL2, C-TB).

Apparently, sunken circular courts are related to the first type of structure, although they do not always appear, like at the site of Áspero. There is

Table 5. Main Architectural Traits of Architectural Compounds with Separated Rear and Front Rooms.

		Cerro Lampay	Áspero		Chupacigarro		Caral
Architectural Units	Architectural Traits	First Structure	Huaca de los Ídolos	Huaca de los Sacrificios	Templo Mayor	Templo del Anfiteatro	Pirámide Mayor
Rear Room	Area (meters)	8.7 x 4.4	5 x 4.5	?	7 x 6	10 x 6	?
	Rear Bench	Yes	No	?	Yes	Yes	?
	Central Bench	No	No	?	No	No	?
	Lateral Benches	No	No	?	No	No	?
	Lateral Entryways	Yes	No	?	No	No	?
Front Room	Area (meters)	12.2 x 11.4	13.6 x 13.4	9 x 9	20 x 20	20 x 20	18 x 17
	Rear Bench	Yes?	?	?	Yes	Yes	Yes
	Central Bench	No	?	?	No	No	No
	Lateral Benches	?	?	?	Yes	Yes	Yes
	Lateral Entryways	Yes	Yes	Yes	Yes	No?	Yes
	Firepit	?	?	Yes	Yes	Yes	Yes

a rectangular area that separates the structure from the courts. This area may consist of a low platform (CL1), a medium-high platform (Ch, C-TA), or a high stepped platform (C-TM). The distance between courts and compounds is always larger than 10 m.

The similarities identified among these sites reveal an organizational pattern of ritual space and open the possibility of identifying the basic architectural arrangement for the North Central Coast during the late Archaic period. This pattern appears to be defined by a two-room structure, in which the front space is twice as large as the rear one. In addition, the front space is usually square, while the rear one is elongated. This type of structure might have had multiple entryways (i.e., front, rear, and lateral) in both spaces and might have had benches that divided them into halves or quarters.

Sites containing large and multiroom structures, such as Chupacigarro or Caral, indicate that, based on this basic arrangement, buildings could aggregate other architectural elements or could increase their scale. Therefore, the two-room structure appears as a modular unit that regulated the growth and development of larger and more complex units, such as the ones identified at Chupacigarro and Caral and those that should be present in other large sites of the North Central Coast.

Concluding Remarks: Ritual Spaces in a Context of Emergent Complexity

Excavations at Cerro Lampay allowed the definition of an architectural pattern of a two-room structure with multiple accesses. This kind of architecture was built between 2400 and 2200 B.C.

Table 6. Main Architectural Traits of Architectural Compounds with Integrated Rear and Front Rooms.

Architectural Units	Architectural Traits	Cerro Lampay Second Compound	Áspero Huaca de los Ídolos Room 3-5	Chupacigarro Templo Mayor	Caral Templo de la Banqueta
Rear Room	Area (meters)	5.9 x 2	4 x 1.5	9 x 2	6 x 2
	Rear Bench	No	No	Yes	No
	Central Bench	Yes?	No	No	Yes
	Lateral Benches	No	No	No	No
	Lateral Entryways	Yes	No	No	No
	Niches	No	No	?	?
Front Room	Area (meters)	5.9 x 4.1	4 x 3	9 x 5	6 x 4
	Rear Bench	No	No	Yes	Yes
	Central Bench	No	No	No	No
	Lateral Benches	Yes	No	Yes	Yes
	Lateral Entryways	Yes	No	Yes	Yes
	Niches	Yes	Yes	?	?
	Firepit	No	No	?	Yes

Analyses of the spatial structure and the perceptual structure of the architecture of Cerro Lampay provided significant insights into the behavioral implications of the building's design.

These behavioral implications support a scenario in which ritual activities were accomplished through community organization on the basis of a rising leadership. Nevertheless, the architectural evidence does not suggest a highly formalized hierarchy but, rather, that power positions within the community could have been negotiated through ritual practices that included the dual organization of participants. In addition, ritual activities were the arena in which the local community interacted with neighboring populations. For these populations, the facade of the building displayed a message of the community's unity. This scenario offers new possibilities for the study of the emergence of complex forms of sociopolitical organization on the North Central Coast of the Andes.

It has been noted previously that Cerro Lampay is one example of a larger phenomenon in the development of large-scale architecture within the Peruvian North Central Coast. Indeed, more than 30 sites with large-scale architecture located in the valleys of Fortaleza, Pativilca, and Supe can be assigned to the late Archaic period. Although the number of excavated sites is still limited, the reviewed cases indicate that the two-room structure identified at Cerro Lampay might correspond to a basic architectural arrangement that characterized the late Archaic public buildings of the North Central Coast. Hence, it is necessary to evaluate the applicability of the inferred scenario of Cerro Lampay to other cases.

In that sense, it is significant that, besides the presence of the two-room structure, public buildings like the Templo Mayor of Chupacigarro, the Templo del Anfiteatro of Caral, or the Pirámide Mayor of Caral show very complex arrangements. At Chupacigarro, several spaces are connected to the original structure along a longitudinal axis. At the Templo del Anfiteatro, a perimetric wall encloses an area in which the two-room structure appears. This area includes restricted spaces for ritual and residential uses (Shady 2006a:40; Shady et al. 2003b). A similar case appears at the top of the Pirámide Mayor, where several ritual spaces with restricted accesses are placed on both sides and behind the two-room structure (Shady 2006b:18; Shady and Machacuay 2003).

It seems clear that the inferred scenario for Cerro Lampay results is insufficient to explain more elaborated ritual buildings such as those of Caral or Chupacigarro. These buildings suggest the existence of more formalized elite groups, with exclusive ritual spaces located in restricted areas. The association of these spaces with elite residences (Flores 2006) supports the idea of a more clear differentiation between elite and commoners within ritual buildings at Caral.

This architectural comparison reveals that it is a mistake to homologize the social organization of the human groups that inhabited the North Central Coast during the late Archaic period as a single type. On the contrary, it seems to be more productive to search for the different trajectories that led to these contrasting scenarios.

In regard to these trajectories, radiocarbon dates at Caral indicate that it had a much longer occupation than Cerro Lampay (up to 1,000 years since 3000–2000 B.C. [Shady et al. 2001]). Nonetheless, the dates that come from the reviewed architectural contexts correspond to the second half of the third millennium B.C. and, thus, are roughly contemporaneous with those of Cerro Lampay (Shady et al. 2001; Vega-Centeno 2005:310–312). This means that the structures of Cerro Lampay might have coexisted with the last construction stages of buildings like the Templo del Anfiteatro and the Pirámide Mayor. A tentative explanation for the possible relationship among these sites is proposed in the following lines.

As mentioned before, survey has allowed the identification of up to 40 sites with platform mounds and sunken plazas within the Fortaleza, Pativilca, and Supe valleys. Based on these architectural characteristics, sites in the Fortaleza Valley were placed into two categories: isolated structures and architectural complexes. The latter consist of more than one structure within each site (Vega-Centeno et al. 1998:223). A similar scenario has been reported for the Supe Valley. Shady and her colleagues (2000:17–20) defined 17 late Archaic sites with large-scale architecture and note that they could be divided into five categories, according to their size and construction activities.

If the architectural units identified in the Fortaleza or Supe sites are also manifestations of communal entities like the one inferred from Cerro

Lampay, two possible scenarios should be considered for the concentration/dispersion of architectural units within settlements and throughout the valleys. In one, there might have been a process of aggregation of different communities within a single site, as a product of specific social and/or political factors. The other scenario is of the gradual growth of a communal entity and the rise of "daughter communities" that started to build their own ritual spaces nearby or far away from the original communal emplacement. These scenarios are neither exclusive nor contrary but require a clear assessment of the history and chronology of each of the studied sites in order to be tested.

Finally, the widespread occurrence of public architecture during the late Archaic period in this region is a remarkable phenomenon that requires further commentary. It is highly probable that the residents of the North Central Coast valleys during the late Archaic were in constant and intense interaction, which may have resulted in displays of competition and emulation (Renfrew 1986) in ritual settings. This dynamic process explains the formal homogeneity of ritual architecture within the region, as well as the scale and complexity of sites such as Caballete, Porvenir, Caral, and Pueblo Nuevo, which appear as some of the most dynamic and/or successful peers within the North Central Coast. Even a relatively small site like Cerro Lampay was significantly oriented toward outsiders, with specific architectural features that displayed messages of community unity within a wide congregational space. In other words, the design of ritual architecture at Cerro Lampay provided a means to assert the community's identity and status to neighboring groups. Further exploration of contemporary sites will allow further testing of these ideas about public architecture and sociopolitics in this dynamic period and region in Andean history.

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Notes

1. The index of relative asymmetry (RA) is defined as RA = (2[MD – 1])/(K – 2), where MD is the mean depth (calculated after adding the number of spatial units weighted by their depth level) and K is the number of spatial units or cells in the structure (including the carrier space). The index of relative ringiness (RR) denotes how, when there is more than one pathway connecting two units, the second pathway is represented by an encircling ring, indicating how distributed (i.e., noncentralized) the spatial organization is. RR = $r/(2p - 5)$, where r is the number of rings identified in the structure and p is the number of unit cells in the structure (Hillier and Hanson 1984:108–109, 152).

2. This pattern was latter identified in the Pativilca (Ruiz et al. 2007) and Huaura (Aguilar 2006; Chu 2008).

3. The term *entombment* was originally used to explain the burying of ritual structures at the site of Kotosh (Izumi and Matsuzawa 1976) before new buildings were constructed. In the case of Cerro Lampay, this "entombment" process was followed by the site's abandonment, a phenomenon that has been reported for middle Formative period sites such as Huaca Lucía (Shimada et al. 1982).

4. Samples were analyzed in the AMS Laboratory of the University of Arizona, in Tucson.

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