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SACRED EARTHEN ARCHITECTURE IN THE NORTHERN SOUTHWEST: THE BLUFF GREAT HOUSE BERM

Catherine M. Cameron

This article reports on the excavation of a "berm"—an earthen mound that surrounds the Bluff Great House in southeastern Utah. Comparisons are made to Chacoan-era (A.D. 850–1150) great house mounds in Chaco Canyon and to other berms and mounds at great houses throughout the Chacoan region. Great house mounds in Chaco Canyon and berms outside Chaco Canyon are assumed to have been ritual architecture, and continuity in the use of mounded earth and trash as a sacred place of deposit is traced through time from the Pueblo I period to modern Pueblos. The Bluff berm does not seem to have been constructed as the result of ceremonial gatherings (as has been suggested for the great house mounds in Chaco Canyon), but there is intriguing evidence that it continued to be used into the post-Chacoan era (A.D. 1150–1300), perhaps as a result of a restructuring or revival of Chacoan ideas in the northern San Juan region. Examination of the spatial distribution of berms suggests that they are most common at great houses south and west of Chaco Canyon; the northern San Juan region, where Bluff is located, has far fewer such features, possibly because the revival of Chacoan ideas in this region was short-lived.

Este escrito reporta la excavación de un túmulo—un montículo de tierra que rodea la Gran Casa del sitio Bluff en el suroeste de Utah. Se han hecho comparaciones con montículos de grandes casas de la era Chacoana (850–1150 d.C.) en el Cañón Chaco y con otros túmulos y montículos en grandes casas a lo largo de la región Chacoana. Se ha asumido que los montículos de grandes casas en el Cañón Chaco y los túmulos fuera del Cañón Chaco fueron arquitectura ritual, y la continuidad en el uso de tierra amontonada y basura como un lugar de depósito sagrado es rastreada a través del tiempo desde el período Pueblo I hasta los Pueblos modernos. El túmulo de Bluff no parece haber sido construido como resultado de reuniones ceremoniales (como se ha sugerido para los montículos de grandes casas en el Cañón Chaco), pero hay evidencia intrigante de que continuo siendo usado en la era post-Chacoana (1150–1300 d.C.), quizá como el resultado de un reestructuramiento o reavivamiento de ideas Chacoanas en la región San Juan norteña. La examinación de la distribución espacial de los túmulos sugiere que son mas comunes en grandes casas al sur y al oeste del Cañón Chaco; la región San Juan norteña, donde Bluff esta localizado, tiene por mucho un número menor de dichos rasgos, posiblemente porque el reavivamiento de ideas Chacoanas en esta región fue de breve vida.

Artificial landscapes of mounded earth are found in many parts of the world. Western Europe is dotted with causewayed camps and enclosures, such as the famous Windmill Hill in England (Whittle and Pollard 1995) and Sarup in Denmark (Anderson 1997), which use mounded earth to enclose space. Enclosures are also found in the eastern United States (Mainfort and Sullivan 1998) and include the concentric rings at the Archaic Poverty Point site in Louisiana (Gibson 1998) and the geometric enclosure of Newark, Ohio (Lepper 1998). Huge earthen sculptures or effigies such as the Great Serpent Mound are also found in the eastern United States (Squire and Davis 1848). Mounds and platforms, such as the Pu'ukohola heiau in Hawaii (Stokes and Dye 1991), are widespread in

the Pacific. In Mesoamerica, platform mounds served as the foundation for palaces and temples, and even domestic structures were elevated on earthen mounds (Sharer 1994:630–634). Platform mounds have been found among the prehistoric and historic Native Americans of the U.S. Southeast and have long been recognized in the southern part of the Southwest at sites of the Hohokam culture (Elson 1998; Haury 1945).

In the northern part of the American Southwest, constructed landscapes of mounded earth have been recognized in association with great houses of the Chacoan era (A.D. 900–1150, broadly termed the Pueblo II period). Until recently, such mounds were assumed to have been simple trash dumps. Although generally smaller and more subtle than the mounds of

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Europe, Mesoamerica, and the eastern United States, southwestern earthen constructions are now believed by many archaeologists to be part of a carefully constructed and highly significant prehistoric landscape (Fowler and Stein 1992; Fowler et al. 1987; Lekson et al. 1988; Marshall 1997:67–68; Stein and Lekson 1992; Toll 2001; Van Dyke 2002; Windes 1987b).

Chaco Canyon in northwest New Mexico was the center of a large regional system during the Chacoan era. Great houses (enormous masonry structures that are considered by many scholars to have been community or ceremonial centers) built in Chaco Canyon were fronted by large mounds that were apparently built over a relatively short period of time (50–70 years). At Pueblo Alto, the only recently and carefully excavated great house mound, thick layers of cultural material suggest that the mound was produced during ceremonial gatherings in Chaco Canyon when ceramics and other goods were ritually deposited in the mounds (Toll 1985, 2001; Windes 1987b:616; but see Wills 2001). Similar but smaller great houses outside Chaco Canyon (Kantner and Mahoney 2000) had smaller mounds that often took on more elaborate forms, sometimes encircling the great houses or defining prehistoric roads. The Chacoan regional system came to an end about A.D. 1150, but there is evidence that great houses continued to be used into the late twelfth and early thirteenth centuries (Fowler and Stein 1992; Kintigh et al. 1996; Lipe et al. 1999; Varian et al. 1996).

Although great house mounds have been excavated in Chaco Canyon for over a century, few such features have been explored at great houses outside the canyon. Excavations of a berm at the Bluff Great House (42SA22674) in southeastern Utah (Figure 1) provide one of the first comprehensive studies of the earthen mounds that often surround extracanyon great houses.¹ The Bluff Great House site is located in the northern San Juan region, an area that once formed the northern part of the old Chacoan world. The berm forms a large oval (more than 100 m across) around the great house, with earth and cultural debris heaped in discontinuous piles almost 2 m deep (Figure 2).

Excavation of the Bluff berm offers an intriguing look at one of these features, and this article develops a context for examining the Bluff berm. It begins with a description of the Chacoan regional system and discussion of the mounds associated with great houses inside Chaco Canyon, including a recent cri-

tique of these features as ritual constructions. Research on berms at great houses outside Chaco Canyon is then reviewed. The practice of using mounded earth and trash as a sacred place of deposit is traced through time from the Pueblo I period (A.D. 700–900) to modern Pueblos, providing a strong line of evidence for the importance of mounds in Chacoan-era ritual. Excavation of the Bluff Great House berm is described, and evidence is presented suggesting that construction on the berm continued into the post-Chacoan era. A short examination of the distribution of berms in space and time is used to propose explanations for the continued use of the Bluff berm during the post-Chacoan era.

Earthen Architecture and the Chacoan Era

Beginning about A.D. 860, almost a dozen large, massively built masonry buildings or “great houses”—far bigger than any structures previously known in the ancestral Pueblo world—were built in Chaco Canyon in northwestern New Mexico (Windes and Ford 1996:300). The great houses in Chaco Canyon have been studied for over a century, and a striking feature of many of these sites is a large mound (up to 6 m high)—of what appears to be domestic garbage—found in front of each. These great house mounds contain a wealth of cultural material, which early archaeologists saw as a potential gold mine for developing ceramic seriations and time/space systematics (Judd 1964:212; Roberts 1927).

Although early archaeologists considered great houses to be simply large domestic structures (akin to, say, Taos Pueblo), by the late twentieth century it was clear that these structures usually had only small resident populations (Bernardini 1999; Windes 1987a). Furthermore, by the late 1970s we knew that Chaco Canyon was the center of a large regional system (Lekson et al. 1988). Great houses generally smaller than those in Chaco Canyon but using the same building techniques had been discovered over a wide area of the northern Southwest (Fowler and Stein 1992; Lekson 1991; Marshall et al. 1979; Powers et al. 1983). A system of prehistoric roads led out of Chaco Canyon, and, while perhaps not continuous, roads were also found at great houses considerably distant from the canyon (Kincaid 1983; Roney 1992). A Chacoan community pattern began to be recognized both in Chaco Canyon and across the northern Southwest: small hamlets (“unit pueblos”) clustered in communities around great houses and

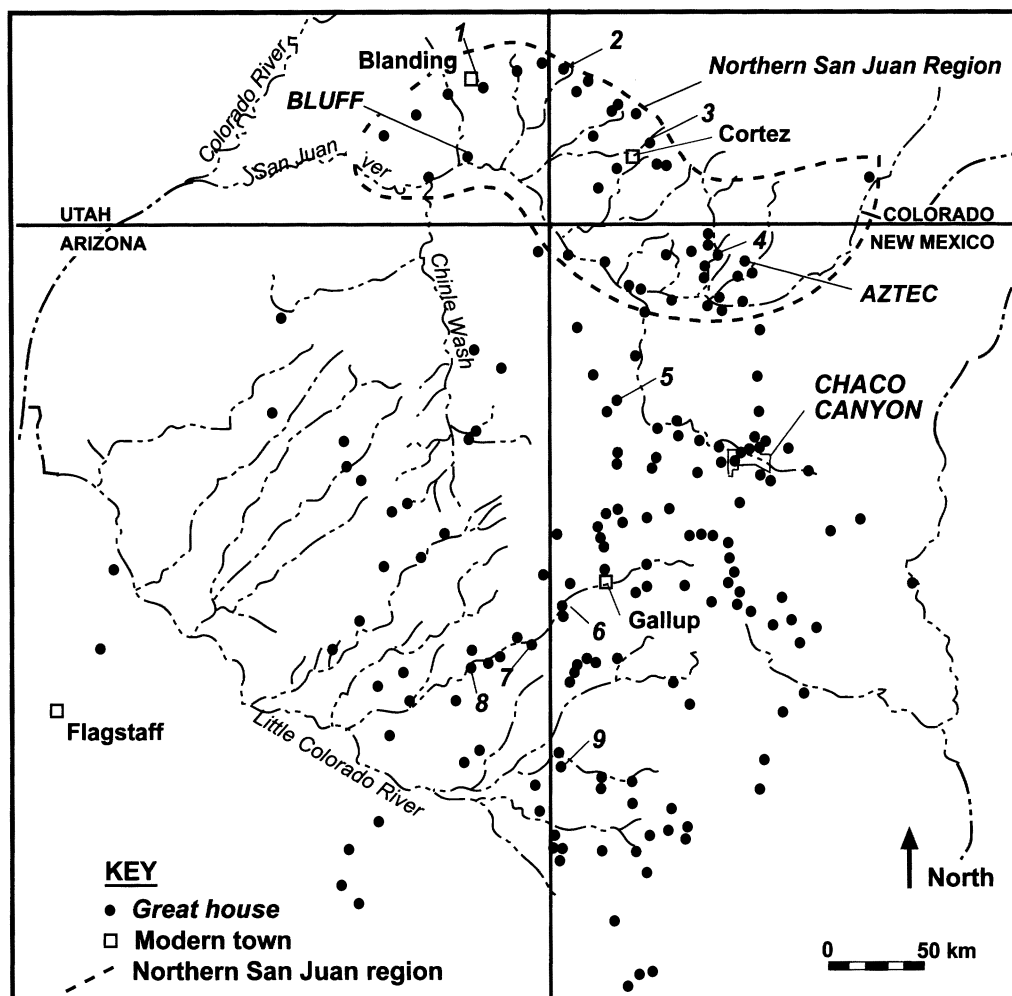


Figure 1. The location of the Bluff Great House, Chaco Canyon, and sites mentioned in the text. Key: 1. Edge of Cedars, 2. Brewer Pueblo, 3. Wallace Ruin, 4. Holmes Group, 5. Newcomb, 6. Manuelito Canyon, 7. Allentown, 8. Navajo Springs, 9. Hinkson.

great kivas (large, round, ceremonial structures), which apparently served as community foci (Lekson 1991; Mahoney and Kantner 2000; Marshall et al. 1979; Powers et al. 1983).

As the ceremonial nature of the Chacoan great houses began to be studied, archaeologists realized that the huge mounds found in front of great houses in Chaco Canyon were not simple middens and contained far more trash than could possibly have been produced by the small populations that occupied these structures (Lekson 1986:74; Windes 1982, 1987b:615–616). Then, at great houses outside Chaco Canyon, archaeologist John Stein and others discovered elaborate earthen constructions that apparently surrounded and defined ceremonial space

(Fowler and Stein 1992; Fowler et al. 1987; Stein and Lekson 1992). Mounds associated with great houses in Chaco Canyon and outside the canyon are differently configured but may be architectural manifestations of a common ideology (Stein and Lekson's [1992] "big idea").

Construction on the great houses in Chaco Canyon ceased about A.D. 1130, and by the mid-eleventh century the Chacoan regional system seems to have come to an end. Throughout the Chacoan world, some great houses were abandoned, but others show occupation into the late twelfth and thirteenth centuries, and, occasionally, new great houses were built. Some scholars have suggested a "restructuring" or "revival" of old Chacoan ideas during the

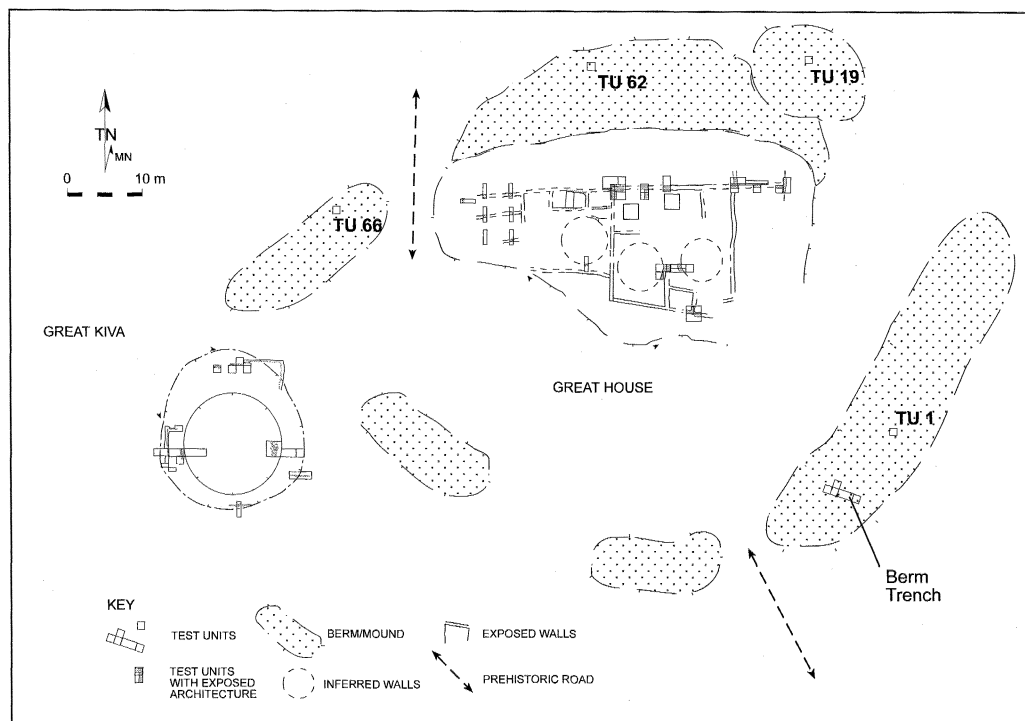


Figure 2. The Bluff Great House showing the location of the great house, great kiva, berm (shaded area), and prehistoric roads. "TU" numbers locate test units in the berm.

post-Chacoan era (e.g., Bradley 1996; Fowler and Stein 1992:109–112; Lekson 1999), and continuing work on the Bluff berm may be an indication of such a movement. The fact that there are few other post-Chacoan berms in the northern San Juan region supports suggestions that the movement was short-lived and ultimately unsuccessful.

Great House Mounds in Chaco Canyon

During the Chacoan era, many—but not all—great houses in Chaco Canyon had large, formal mounds (Winde 1987b). The largest and most elaborate great house is Pueblo Bonito, which was a five-story building with more than 700 rooms and an enclosed plaza that included two great kivas—large, round, subterranean religious rooms. Lekson (1986; also Stein and Lekson 1992) notes that a generation of archaeologists had trenched through the mounds in front of Pueblo Bonito in order to get material for ceramic seriation and had reported, but failed to appreciate, their architectural characteristics. The Pueblo Bonito mounds are unique. Located in front of (southeast of) the enclosed plaza, they consist of two walled mounds reaching almost 6 m in height (Lekson

1986:74). For at least a part of their history, the mounds were topped with a plastered surface that would have provided an excellent elevated platform for ceremonies (like those of Mesoamerica). Pueblo Bonito's mounds are the only mounds inside or outside the canyon that were clearly walled and surfaced (although Tsin Kletzin on the mesa due south of Pueblo Bonito had a light scatter of refuse enclosed by a masonry wall [Winde 1987b:617]). Pueblo Bonito also contained a wealth of exotic goods and is recognized by many archaeologists as the most important great house in Chaco Canyon (Toll 1991).

Several other great houses in Chaco Canyon have large formal mounds, but the practice seems to have been restricted to structures built before A.D. 1100 (Winde 1987b:617). Winde (1982, 1987b) has found that formal mounds are not associated with those great houses built in the last decades of the Chacoan era (A.D. 1100–1130). Even at great houses constructed earlier, use of mounds ceased after A.D. 1100. For example, at Pueblo Alto, a great house located on the mesa just above Pueblo Bonito, an enormous mound almost 4 m high contains trash dating to the A.D. 1000s, but trash from the early A.D.

1100s (Pueblo Alto was in use until about A.D. 1140) was deposited in abandoned kivas in the plaza (Windes 1987b).

Windes's (1987b:664) comprehensive study of great house mounds in Chaco Canyon has found remarkable similarity in the composition of these features. The largest seem to have been deposited within a relatively short period between A.D. 1050 and 1100. Scholars have suggested that Chacoan great houses were places where people gathered periodically for ceremonies, and great house mounds support this hypothesis (Renfrew 2001; Toll 1985, 2001; Windes 1987b:616). Great house mounds show distinct stratigraphic layering indicating that material was deposited intermittently, perhaps once a year. They are quite different from domestic trash middens at small sites that show mixed and disturbed layers resulting from uninterrupted daily deposits of household trash. Furthermore, great house mounds rarely contain burials, which are common in unit pueblo trash middens, suggesting a somewhat different ritual function (Morris 1924:221–225; Roberts 1939:252; Stein and Lekson 1992:96; Windes 1987b:612–613).

The Pueblo Alto mound, the most carefully excavated and best known, consists of thick, widely broadcast layers of homogeneous cultural material and sand that were deposited within a short time period (Windes 1987b:609; but see Wills 2001). The lowest layer is a soft, fluffy, organic matter that may be decayed juniper bark (Windes 1987b:588); Wills (2001) interprets this material as the result of dismantling “small houses” prior to the construction of the great house. Subsequent layers of hard sandstone and mason's tools apparently represent debris from the construction of the great house. Above this are distinct trash layers that include ceramics, chipped stone, faunal bone, charcoal, and other materials. The trash is unlike the household trash found at small sites, however. It seems to have a much lower density of vegetal material, less ash and charcoal, and fewer corncocks.

Ceramics and chipped stone also suggest deposition during periodic ceremonial gatherings. Ceramics were the most common artifacts recovered from the Pueblo Alto mound, and they occurred in high densities in the layered trash, reaching almost 900 sherds per m³. Densities were equally high at some other great house mounds in Chaco Canyon (Windes 1987b: Table 8.14), although Windes notes higher

densities elsewhere in the Southwest. Many ceramic vessels in the Pueblo Alto mound were gray ware jars that had been imported from the Chuska Mountains more than 80 km to the west. Toll (1984) has found that the number of vessels in the mound is far greater than would be expected for the number of people assumed to be resident in Pueblo Alto, suggesting periodic visits by much larger numbers of people. In several cases, bowls that were clearly intentionally broken had been placed in the mound, again suggesting ceremonial deposits (Toll 2001; Windes 1987b:602). Like ceramics, chipped stone was far more common at Pueblo Alto than would be expected for the small population resident at the site. Quantities of imported chipped stone were recovered from the mound at Pueblo Alto, especially lustrous pink Narbona Pass chert. This material may also have been deposited (as offerings?) during large, periodic ceremonial gatherings (Cameron 2001).

Wills (2001) recently reexamined the great house mounds in Chaco Canyon and has argued against their *construction* as part of ritual activities, although he acknowledges that they may have had symbolic significance to the inhabitants of the canyon. Based on a detailed reexamination of stratigraphy, he challenges the presence of distinct “event” layers in the Pueblo Alto mound that other scholars have identified (Toll 2001:70–74; Windes 1987b:615–616). Wills (2001:437) notes that most of the large layers were composed of construction debris and that large trash layers were often not laterally extensive. Large, extensive trash layers would be expected if the Pueblo Alto mound grew through seasonal deposition of large quantities of trash produced by community-wide activities. Wills also questions the idea that large numbers of pots were brought to Pueblo Alto and ritually deposited in the mound (Toll 1984, 1985; Toll and McKenna 1987). Wills (2001:444) argues that the number of whole vessels projected for the mound has been overestimated and that a more reasonable number of pots might be accounted for by construction activities (the need to transport water from considerable distances for construction) and domestic activities.² He explains the presence of restorable pots in the Pueblo Alto mound as the result of small-scale, individual rites (similar to “maternity rubbish heaps” at Hopi) rather than “vessel sacrifice” as part of a large ritual gathering (Toll 2001:64).

Wills (2001:444) also questions Lekson's argument that the Pueblo Bonito mounds were *designed*

as ritual architecture. He notes that the adobe surface cap represents only a short interval in the history of these features. He finds plausible Judd's (1964) original interpretation of these walled mounds as an attempt to bring order to the indiscriminate disposal of trash in front of this important building, although Wills concludes that the mounds are somewhere between "inconvenient piles of debris and carefully designed platform mounds" (2001:446). As an alternative to construction as part of large-scale ritual activity, Wills proposes that the great house mounds in Chaco Canyon developed as a function of "construction intensity, site location, and occupational duration" (2001:447). In other words, efficiency in great house construction required delimited staging and disposal areas for construction materials and debris. Especially in the dense construction area around Pueblo Bonito, formalized locations for trash were necessary.

Wills's study is an important, carefully reasoned, and tightly argued reanalysis of data that have been critical in the interpretation of the Chaco Canyon great house mounds, features important in the explanation of the Chacoan regional system. His article will undoubtedly receive a great deal of comment, but a brief remark on his conclusions seems necessary here. One might argue that a delimited disposal area would make sense in an urban setting but that climbing 3–4 m to dump a basket of construction debris seems unnecessary on the wind-swept mesa top where Pueblo Alto was built, especially when trash could have been deposited anywhere. Wills does not argue against the *use* of the canyon great house mounds in ritual, but he does argue against their *construction* as part of a ritual landscape. Purposeful construction, however, is especially important to the interpretation of extracanyon berms and mounds, such as the Bluff Great House berm (Stein and Lekson 1992; Wills [personal communication, 2001] does not question the symbolic nature of berms outside Chaco Canyon).

Earthen Construction at Great Houses outside Chaco Canyon

At great houses outside Chaco Canyon, mounds are much smaller and more subtle, but reconstructions suggest that they were part of a complex ritual landscape. In a seminal article published only a decade ago, John Stein and Steve Lekson (1992) recognize the mounds at great houses outside Chaco Canyon

as part of carefully constructed cultural landscapes. Stein's intensive study of the great house complex at Manuelito Canyon (Fowler and Stein 1992; Fowler et al. 1987; Stein 1987) and other great houses has revealed an intricate use of earthen construction to "dramatize the architectural context of the great house" (Stein and Lekson 1992:97).

Stein and Lekson (1992:95) find that extracanyon mounds were of three types: (1) linear mounds that flank road segments, (2) berms that encircle great houses, and (3) earth-filled "ramps" that are associated with roads. They observe that the mounds (berms) encircling great houses often defined a sunken avenue ("the dish"). Stein and Lekson note that although the encircling berms "resemble a rampart, the feature is obviously not defensive"; instead, the berms "function as a conceptual boundary delineating sacred space" (1992:96). The mounds that make up an encircling berm are usually sterile earth (possibly from road construction) or construction debris (stone spalls, etc.) from great house construction. Some berms seem to have rubble surfaces that may be construction debris protruding through, although in some cases the "rubble" seems to be an intentional pavement (Stein and Lekson 1992:96). Typically, only the two mounds that face or flank the great house—like those at the great houses in Chaco Canyon—have large quantities of ceramics, yet these mounds often lack the abundant organic material that is characteristic of household trash and instead suggest ritual ceramic deposition (Stein and Lekson 1992:96).

Although extracanyon berms and the great house mounds found in Chaco Canyon were both important elements of ancestral Pueblo people's ritual landscape (Stein and Lekson 1992), based on our current, limited knowledge of these features, they may not be identical in construction or content. Canyon great house mounds seem to be primarily refuse deposited over time in a location similar to that of domestic trash middens in small sites. Berms seem to be somewhat more complex landscape features, which surface inspection suggests were built of whatever material was handy (cultural refuse, construction debris, sterile soil). Such landscape features are found in Chaco Canyon, too, including ramps for roads and berms at the East Community (Windes et al. 2000: Figure 4.6) and the recent discovery of what appears to be a filled and sculpted platform behind Pueblo Bonito (John Stein, personal communication, 2001).

Tracing the Ritual Role of Mounds

Although the majority of scholars today seem comfortable assigning a ritual role to the construction of mounds and berms whether inside or outside Chaco Canyon, Wills's (2001) recent article is certain to stimulate productive discussion on this matter. One line of evidence that might be used to support the ritual role of great house mounds and berms is the apparent continuity in the use of mounded trash in Puebloan ceremony through time. Beginning in the Pueblo I period, formal allocation of space for trash deposition and burial of human remains in these middens became characteristic of the ancestral Pueblo. Elsewhere in the Southwest (except in the Hohokam region of southern Arizona and Paquime in northern Mexico, where platform mounds and trash mounds are found), trash was deposited in thin, poorly defined scatters. Similarly, at modern pueblos in the northern Rio Grande, mounded trash is treated as part of a sacred process of renewal (Silko 1987:83). This apparent continuity in attitudes over as much as 1,000 years provides support to the interpretation of Chacoan mounds and berms as features imbued with ritual significance.

Formal allocation of space for trash disposal apparently began at least during the Pueblo I period (Windes 1982:6) or perhaps as early as the Basketmaker III period (Neily 1982; Nielson et al. 1985), and the large mounds of the Chacoan era apparently continued this practice. It is not surprising, then, that early archaeologists assumed that the great house mounds in Chaco Canyon were simply large trash heaps. Just as the curved form of the earliest great houses replicated the arc of domestic rooms typical of the small Pueblo I (A.D. 700–900) "unit pueblos" (Lekson 1986:264), the huge mounds in front of the great houses replicated the "trash middens" found at these early sites. Unit pueblos typically consisted of an arc of above-ground storage or habitation rooms that faced south or southeast. In front of the arc were two or three pit structures used for habitation, and beyond these was the trash midden, visible archaeologically as an artifact scatter or sometimes a low mound.

During the Pueblo I period, deposited cultural material apparently began to take on ritual importance. Perhaps the strongest evidence for this role is that Pueblo I trash middens not only contained daily dumps of domestic trash, they often contained human

remains (Akins 1986:82; Morris 1924:221–225; Roberts 1939:252; Stein and Lekson 1992:96; Windes 1987b:612–613). Mortuary activities are associated with mound building in many parts of world (Bellwood 1979:312; Dragoo 1963; Elson 1998:43; Goldstein 1995; Whittle 1996:244). Although the great house mounds in Chaco Canyon do not contain human remains, other, clearly ceremonial, mounds in the Southwest—at Classic period Hohokam sites and at Paquimé in northern Mexico—undoubtedly were built for ritual reasons and yet rarely contain human remains (DiPeso et al. 1974; Elson 1998; Haury 1976). The lack of human remains in great house mounds marks them as different but, I argue, does not negate their ritual importance. During the Chacoan era, burial continued to occur in trash middens at small sites (Akins 1986; Roberts 1939:252).

Leaping ahead in time more than 1,000 years, a reverential attitude toward discarded cultural material is echoed at historic Pueblos in the northern Rio Grande region of New Mexico (e.g., Silko 1987:83). This area is presumed to have been the recipient, at the end of both the Chacoan and the post-Chacoan eras, of refugees from the northern part of the old Chacoan world (Cameron 1995; Cordell 1995). Here the objects of everyday life are not discarded thoughtlessly by Pueblo people but, rather, are treated as a sacred part of long-term recycling. Ashes are especially important and are used in all sorts of ceremonies as protection against disease or witchcraft (Parsons 1939:196). Trash mounds also seem to be important landscape features at some modern pueblos and are often considered shrines. Florence Ellis (1966:806) describes "ash piles" along four sides of Zia Pueblo and notes that they represent the ancestors of the people and that prayer offerings are placed on them at intervals. She suggests (1966:806) that this is a survival of the prehistoric custom of burying the dead in village trash middens, a common ancestral Puebloan pattern. Ortiz (1969:20) describes shrines in the middle of refuse mounds at San Juan Pueblo and relates them to the ancient Pueblo practice of burying the dead near the village and leaving a rock or pile of stones to mark the spot.

Tracing meaning through time is challenging, but the apparent continuity in Puebloan attitudes toward trash and the significance placed on mounded trash strengthens the interpretation of Chacoan great house mounds and berms as ceremonial constructions.

Links among ancestral Puebloan beliefs, Chacoan great house mounds and berms, and historic Pueblo practices seem apparent.

The Bluff Great House Berm

The Bluff Great House berm provides one of the first detailed glimpses into an extracanyon Chacoan great house berm. Our knowledge of extracanyon berms has been limited, as only a few have been excavated (Hinkson [Kintigh et al. 1996], Newcomb [Zunie and Ruppe 2000], Navajo Springs [work consisted of screening "back dirt" from looters' holes; John Stein, personal communication, 2001], and Kin Ti'ish [Kantner 1996]; see Figure 1). The Bluff Great House berm offers an intriguing contrast to the great house mounds in Chaco Canyon and berms described by Stein and Lekson (1992) in terms of stratigraphy and artifact content. The following discussion provides a brief description of the Bluff Great House site and a detailed description of excavations in the berm. The discussion focuses particularly on dating the berm. Berms have been assumed to be Chacoan-era features, but there is evidence that the Bluff Great House berm may have been in use during both the Chacoan and the post-Chacoan eras. The sheer mass of the berm, as well as its form, indicates that this was a highly significant feature for prehistoric people who used the Bluff Great House.

The Bluff Great House was on the northwestern frontier of the old Chacoan world (Figure 1). It is located on a terrace overlooking the San Juan River, 200 km northwest of Chaco Canyon. It exhibits most of the characteristics associated with Chacoan sites (Figure 2; Jalbert and Cameron 2000). The great house was built, at least partially, of wide Chacoan-style core-and-veneer walls (although it lacks the elaborate, closely fit, "chinked" masonry techniques characteristic of canyon sites) and was two or perhaps three stories tall. A great kiva is just southwest of the great house. The berm appears as a series of low mounds surrounding the front of the great house and forms a platform along the rear wall. It is discontinuous, and at least some of the breaks may represent entry points for prehistoric roads.

The University of Colorado conducted excavations at the Bluff Great House between 1995 and 1998 (Cameron and Lekson 2000; Jalbert and Cameron 2000). The great house, the great kiva, and the berm were all intensively tested (Figure 2). The great house was built in at least two (and possibly

three) construction episodes. The earliest construction at the western end of the structure used narrow, single-course masonry walls unlike the wide core-veneer walls typical of the Chacoan era. Chacoan-style core-veneer walls characterize the eastern portion of the structure. Other Chacoan characteristics include three round rooms (called "blocked-in kivas"—argued by some to have been used as habitation rooms [Lekson 1986:50–51, 1988], whereas others suggest that they were ceremonial chambers) built into the front of the great house. The walls of at least two of these three kivas were heavily plastered and decorated with red paint. A single noncutting tree-ring date of A.D. 1111 ±vv was obtained from a beam recovered from the westernmost kiva. Ceramics are consistent with long-term use of the Chacoan structure, a common pattern throughout the Chacoan world (Bradley 1996; Fowler and Stein 1992; Lekson and Cameron 1995). Ceramics recovered from the great house ranged from Chacoan era in the lowest stratigraphic levels to post-Chacoan (A.D. 1150–1300) especially in upper levels; a few pre-Chacoan-era sherds came from beneath the great house, and many others were found elsewhere at the site.

The great kiva is presently visible as a large dish-shaped depression (Figure 2). Test trenches across the east and west margins of the depression revealed a 3-m-deep, masonry-lined structure, about 13 m in diameter, at least partially surrounded by a series of shallow antechamber rooms, which are perched around the edge of the great kiva. The westernmost antechamber was the only one completely defined by our excavations. It consisted of a room that extended for 5 m along the west side of the great kiva, was 2 m wide, and had a packed-earth floor. An antechamber along the north side of the great house was not completely defined but had a bench or step that may have led into the central part of the great kiva. (Northern entrances are a common feature of Chacoan great kivas, especially in Chaco Canyon and the northern San Juan [Vivian and Reiter 1965:87–88]). None of our test trenches reached the floor of the great kiva (in deference to our Native American consultants), but a cobble-lined bench was observed in the base of our deep western trench. Few ceramics or other datable materials were recovered from this structure, but in form it is not unlike other Chacoan-era great kivas.

The berm is a fascinating structure that has pro-

duced the majority of artifacts recovered from the site. Like the encircling berms described by Stein and Lekson (1992), the Bluff berm consists of five discrete mounds forming a maximum diameter of more than 100 m. Each test unit in the berm found at least 1 m of cultural material, at times almost 2 m. The berm surrounds the great house but excludes the great kiva. At one time, the margin of the great kiva, which is defined by slightly mounded sediments, may have merged with the berm surrounding the great house, as seen at a few of the sites illustrated by Stein and Lekson (1992) and described for the Hinkson Site (Kintigh et al. 1996). Similarly, at the Edge of the Cedars Great House, the great kiva berm may have merged with a midden, extending it to the east (Hurst 2000:74). As at the Hinkson Site and other sites described by Stein and Lekson (1992), there seems to be a depressed area between the great house and the great kiva (also noted at the Andrews Great House [Van Dyke 1999]). Stein and Lekson (1992:96) describe a "sunken avenue" inside the encircling berm, but at the Bluff site (as at Hinkson and Andrews) the depression is *in front of* the great house, not behind it, forming something akin to a plaza. We did not conduct excavations into this possible plaza area during the 1995–98 excavations.

Some of the breaks in the Bluff berm were entryways for prehistoric roads—at least one road ran between the great house and the great kiva. (The berm was also cut by modern road construction.) At the rear of the great house, the berm actually forms an unusual platform that abuts and slopes away from the back wall of the structure. Great houses tend to be built in prominent spots (e.g., Eddy 1977; Van Dyke 2000:97), and the location of the Bluff Great House on a terrace remnant is quite prominent. Although it is possible that the builders constructed a platform beneath the great house to give it more height, our single subfloor excavation showed no evidence of this (although microstrata below floor level in one deep test unit in a rear room may represent some sort of ground preparation). The presence of a platform *behind* the great house is puzzling. Although it could represent the mingled remains of a once-freestanding berm and a deteriorated rear wall, I am not aware of other great house sites in which the berm was built so close to the great house.³

As with the encircling berms described by Stein and Lekson (1992), the largest and highest portion of the Bluff berm is just southeast of the great house.

Based on surface evidence, this mound also contains the densest trash, so we concentrated our efforts here, excavating a long trench that was intended to bisect the mound. One by one meter excavations were also placed just north of this trench, in the small mound that forms the northeast part of the platform, the platform itself, and the mound just west of the great house (Figure 2). All sections of the berm that were excavated produced moderate-to-dense cultural material confirming the artificial nature of the berm.

Our trench through the southeast portion of the berm ("Berm Trench") was 5 m long and 1 m wide and had a 1-x-1-m extension excavated adjacent to and north of the trench (Figure 2). Cultural material extended to a depth of 1.75 m, where the natural pavement of terrace gravels was exposed. Strata in the Berm Trench had a fairly pronounced slope to the east (Figure 3), and as excavation progressed, we added units to the west end of the trench in hopes of finding the "top" of the berm. We were not successful and suspected that the top of the ancient berm may have been truncated by erosion or perhaps "mined" for fill by later site occupants. However, if basketfuls of dirt were always placed on the outside edge of the berm so as not to narrow the space it enclosed, upper layers may not be missing.

The Berm Trench does not exhibit the distinct "event" layers found at the great house mounds in Chaco Canyon, but it does have several layers that suggest discrete episodes in the formation of the berm. What we originally thought was the lowest cultural layer (Stratum V) included a thick, flat lens of burned organic material that we interpreted as the base of the berm, perhaps even the result of some sort of initiation ceremony. It contained charcoal from a variety of different woods; edible plants such as corncobs, beans, goosefoot seeds, prickly pear fruits, and rice grass; and burned animal bone (Cummings and Puseman 1999). When this stratum was further exposed we realized that it was not the base of the berm. The layer has a slight eastward slope, and cultural material extended below the burned layer. Below the burned layer (Stratum 6 and 6.1 in Test Unit 43, combined as Stratum V in Figure 3) were many large sherds that were also burned. Considering that the sherds were burned after the vessels had broken, burning may have occurred after they were part of this trash accumulation (presumably, after they were placed in the berm). The burning was clearly one of the earliest events in the berm

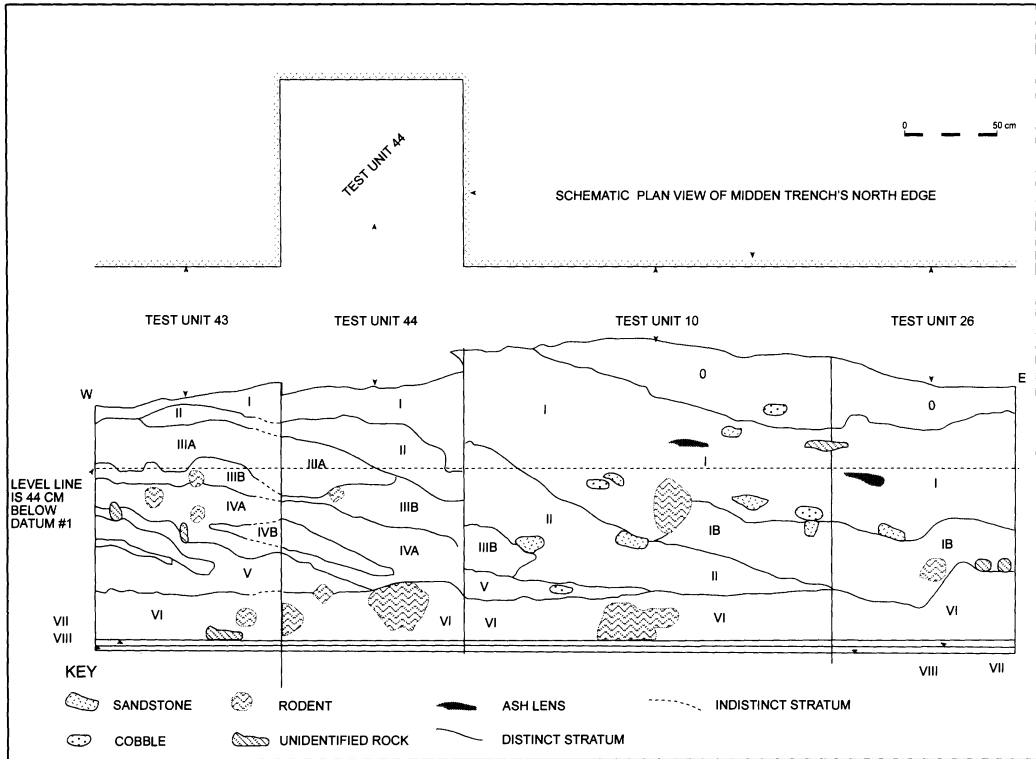


Figure 3. Stratigraphic profile of the north wall of the "Berm Trench" excavated through the southwestern portion of the Bluff Great House berm.

construction, although it may not have signaled the initialization of the structure. Stratum VI (Figure 3) was the basal layer of the berm and probably the initial surface on which the berm was constructed.

Above the burned layer were layers of trash (Strata IVA and IVB; IIIA and IIIB in Figure 3) that contained ceramics, chipped stone, faunal bone, eggshell, corncobs and other vegetal material, and ash lenses apparently from individual hearth dumps. Capping these layers was a dense but distinct layer of fired adobe fragments (Stratum II) that slopes steeply to the east and may be the discarded remains of a roof (roofs were constructed of wood, brush, and mud) or a jacal (stick and mud) structure. The adobe was hard and reddish, suggesting the remains of a burned structure. The adobe layer appears to have been deposited rapidly, along with other building material including sandstone spalls and hammer stones. The adobe layer may represent the disposal of material from structures that predated the great house (such "demolition" layers have been suggested for the Pueblo Alto mound by Wills [2001:439] and for Chetro Ketl, another Chaco Canyon great house

[Windes 1987b:640]), whereas the sandstone spalls and hammer stones presumably result from the construction of the masonry walls of the great house or great kiva. Above the adobe layer more trash had been deposited.

Dating the Bluff Berm

The majority of the Bluff berm seems to have been built in the Chacoan era. Significant numbers of post-Chacoan-era ceramics from this structure demonstrate that it continued to be used after the "collapse" of Chaco Canyon, however. Ceramics from the Berm Trench dated primarily to the Pueblo II period (Chacoan era).⁴ Pueblo III (post-Chacoan-era) pottery was found primarily in the uppermost levels, suggesting construction of the berm over time (Figure 4). The distinct strata recorded in the Berm Trench also suggest the construction of this part of the berm over time. The burned layer, the adobe layer, and the ash lenses seem to be the result of distinct depositional events. The ash lenses in trash fill seem to be individual dumps of ashy material, likely hearth-cleaning events.

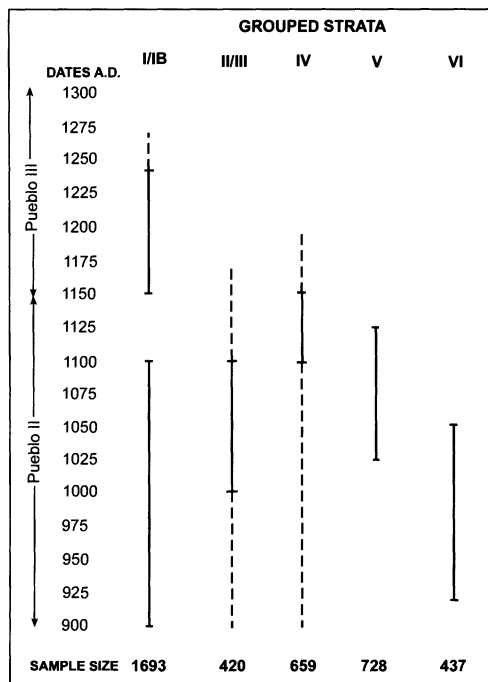


Figure 4. Ceramic dates from the Bluff Berm Trench. The figure includes only ceramics that fit into grouped strata.

Test Unit 1 was also excavated in the portion of the berm southeast of the great house, about 10 m north of the Berm Trench (Figure 2). This 1-x-1-m unit was not as deep as the Berm Trench and had far fewer Pueblo III ceramics. The small collection of sherds from the lower levels was dominated by Pueblo I and Early Pueblo II pottery. The upper levels contained primarily Pueblo II types but with a substantial admixture of Pueblo I ceramics and a few Pueblo III sherds. This assemblage is consistent with the construction of this section of the berm over time.

On the platform directly behind the great house, Test Unit 62 (Figure 2) had primarily Middle Pueblo II sherds in the lower levels and Pueblo III sherds in the upper levels. Test Unit 66, in the portion of the berm west of the great house (Figure 2), had a small ceramic sample described as "solid Middle Pueblo II." This test unit also produced numerous large pieces of charcoal, two of which produced tree-ring dates of 1114 +v and 1116 vv, suggesting that this portion of the berm was constructed during or after the early 1100s (Late Pueblo II period).

Test Unit 19, at the northeast edge of the platform behind the great house, was temporally somewhat later than the other berm test units and appears to be a large, distinct deposit of trash placed in this loca-

tion after the platform was constructed. Sherds from Test Unit 19 were evenly divided between Middle-Late Pueblo II and Early Pueblo III types. A piece of charcoal with a cutting date of A.D. 1120 +rB confirms that this part of the berm was constructed during or after the Late Pueblo II period.

Faunal remains from the Berm Trench support a Chacoan-era construction of the berm and continuing use of the structure into the post-Chacoan era. Faunal analyst Jonathan Driver (2002) has found that the Bluff berm fits a consistent pattern in faunal remains that he has identified throughout the northern San Juan. Driver has discovered that the Pueblo II period is characterized by mixed use of artiodactyls (bighorn sheep and deer), lagomorphs (cottontail and jackrabbit), and turkey. The Pueblo III period is characterized by a decrease in artiodactyls and a significant increase in turkey. A similar pattern has been reported for sites in Chaco Canyon (Akens 1985:377). At Bluff, Driver finds that artiodactyls were most common in the lower layers of the Berm Trench (Strata V and VI), reaching 70 percent of the artiodactyl/lagomorph/turkey assemblage for these layers. In the middle layers of the Berm Trench (Strata I-IVB) artiodactyls drop to 30 percent of the assemblage, and there is an increase in cottontail and jackrabbit. In the uppermost layers (Strata I and IB) there is a sudden increase in turkey. Thus, the faunal remains from the Berm Trench reflect a regionwide temporal sequence and suggest the construction of this feature over time.

Radiocarbon dates recovered from the base of the Berm Trench provide a slightly different scenario and may indicate that this portion of the berm was *constructed* in the post-Chacoan era. Seven corn cobs recovered from the burned layer of the Berm Trench and from the layer below it (both included as Stratum V) have provided radiocarbon dates (Table 1). Two of the dates are quite early, but the other five extend well into the post-Chacoan era. Although the ranges for all dates overlap with the Chacoan era, these dates open the possibility that at least a portion of the berm was constructed during the post-Chacoan era (possibly the early 1200s) using redeposited Pueblo II trash.

Rodent disturbance could, of course, account for the presence of post-Chacoan-era corn at the base of the berm. Rodent disturbance is evident in the Bluff Berm Trench (as it is in most trash deposits throughout the Southwest and elsewhere). Five of the radio-

Table 1. Radiocarbon Dates from the Bluff Great House Berm Trench.

Sample Number	BETA #	Provenience ^a (All Berm Trench)	Sample Type	Radiocarbon Age, Years B.P.	Intercept ^b	¹² C/ ¹³ C Ratio	2 Sigma Calibrated Results
CUBLUFF1441X	112583	TU 25, Level 13 (Stratum V—burned layer)	corncob	1190 ± 80 B.P.	A.D. 875	-12.6 ‰	cal A.D. 670–1010
CUBLUFFP2062	122103	TU 43, Layer 5 (Stratum V—burned layer)	corncob fragment	1040 ± 40 B.P.	A.D. 1005	-11.3 ‰	cal A.D. 960–1035
CUBLUFFP3011	122105	TU 43, Layer 6 (Stratum V—below burned layer)	corncob shank	920 ± 40 B.P.	A.D. 1065 A.D. 1075 A.D. 1155	-10.5 ‰	cal A.D. 1020–1220
CUBLUFFP3009	122104	TU 43, Layer 6 (Stratum V—below burned layer)	corncob fragment	940 ± 60 B.P.	A.D. 1045 A.D. 1105 A.D. 1115	-10.3 ‰	cal A.D. 995–1235
CUBLUFF1439B	122581	TU 25, Level 13 (Stratum V—burned layer)	corncob	850 ± 40 B.P.	A.D. 1215	-11.3 ‰	cal A.D. 1055–1090 cal A.D. 1150–1270
CUBLUFF1439C	112582	TU 25, Level 13 (Stratum V—burned layer)	corncob	850 ± 40 B.P.	A.D. 1215	-10.2 ‰	cal A.D. 1055–1090 cal A.D. 1150–1270
CUBLUFF1439A	112580	TU 25, Level 13 (Stratum V—burned layer)	corncob	870 ± 70 B.P.	A.D. 1195	-13.3 ‰	cal A.D. 1020–1285

^a The Berm Trench was excavated in arbitrary levels and natural layers. Strata were defined in profile.

^b Intercept of radiocarbon age with calibration curve.

carbon-dated corncoobs came from the dense, stratigraphically distinct layer of burned vegetal material described above (Table 1). Although field notes report evidence of rodent disturbance, this layer was the most clearly defined and seemingly intact of any identified in the berm. The presence of corncoobs here is consistent with other vegetal material found in the layer, and the dated corncoobs arguably were *not* introduced into this layer by rodent activity. Two of the radiocarbon-dated corncoobs are from just below this burned layer (Table 1) and are more problematic. Much more extensive rodent disturbance was noted in this layer. However, in Test Unit 43, where these samples were taken, excavators recorded only a single, large rodent hole in the northeast quadrant of the unit; the corncoobs were recovered from the southeast quadrant. Again, the radiocarbon-dated corncoobs do *not* appear to have been introduced into this layer by rodent activity.

A scenario for the construction of this portion of the berm that would fit the late radiocarbon dates and (most) other evidence is that, sometime during the late 1100s or early 1200s, trash, including lots of vegetal material, was deposited and burned and then Pueblo II trash (including ceramics and faunal remains), mined from elsewhere at the site, was mounded over this basal layer. Later, reconstruction or new construction took place in the great house or great kiva. The adobe layer may represent the removal of discarded roofing material, and the sandstone spalls and masonry tools may represent the debris from constructing new walls. After these demolition and construction events, daily trash continued to be deposited in this spot (as is typical for Puebloan trash disposal) by people who lived there during the late 1100s and early 1200s.

In order to assess whether the middle layers of the Berm Trench represent redeposited Pueblo II trash, average sherd weights were calculated for each stratigraphic layer (Table 2). Redeposition would likely result in damage to sherds resulting in a smaller average sherd size. Sherds had been weighted by "lot" (all sherds of a single type from a single bag), making statistical comparisons difficult, but inspection shows large sherds in Stratum V, which includes the burned layer and the one below it, which may represent the initial deposits of the berm. Sherds above and below this layer are smaller, with the smallest sherds in the surface layer (Stratum 0) where they were most subject to recent trampling. Sherds

Table 2. Bluff Great House Berm Trench
Average Weight of Sherds.

Provenience	Weight/Count ^a (Avg. Weight in Grams)
Berm Trench strat 0	2.79
Berm Trench strat I + Ib	4.30
Berm Trench strat II + III	4.89
Berm Trench strat IV	7.20
Berm Trench strat V	10.43
Berm Trench strat VI	6.26
Berm Trench strat VII, VIII	5.09

^aIncludes only sherds that fit into grouped strata.

in Strata I–III have a mean weight of about 4.5 gms. Eric Blinman (personal communication, 2000), ceramicist for the Bluff Great House Project, calculated average sherd weights for the Dolores Project ceramics (collections from sites that were primarily Pueblo I in time) and determined an average sherd weight of 6 gms. Strata I–III sherds are smaller than that, which *suggests*, but obviously does not confirm, that they have been subject to disturbance processes (such as redeposition or exposure to trampling) that would cause an increased amount of breakage. Sherds just above the burned layer averaged slightly larger than 6 gms.

The Bluff Berm and Chaco Canyon Great House Mounds

As discussed above, Stein and Lekson (1992:96) have found that the portions of encircling berms that front or flank great houses often have dense ceramic components that they believe are ritual deposits. In Chaco Canyon, Windes (1987b; see also Toll 1985, 2001) has found that great house mounds in this same position had relatively high densities of ceramics that seem to have been deposited periodically, perhaps during large ceremonial gatherings. Windes (1987b; see also Table 3) has found sherd densities ranging from less than 300 sherds per m³ to more than 1,300 per m³ at the great house mounds. Interestingly, sherd density in the Bluff Berm Trench and Test Unit 1 were the highest of the five units we excavated in the Bluff berm and were comparable to those found at Chaco Canyon great houses (Table 3). Test Units 62 and 66, located north and west of the great house, had densities below 200 sherds per m³, whereas Test Unit 19 had a somewhat higher density. Comparing sherd densities among sites is problematic, however. Some analysts discard tiny sherd fragments (smaller than a thumbnail), and others

Table 3. Ceramic Density at Chaco Canyon Great House
Mounds and the Bluff Berm.

Provenience	Sherd Density (Sherds per m ³)
Bluff Great House	
Bluff—Test Unit 43 (Berm Trench)	527
Bluff—Test Unit 44 (Berm Trench)	393
Bluff—Test Unit 1 (southeast of great house)	532
Bluff—Test Unit 19 (northeast of great house)	432
Bluff—Test Unit 62 (on platform north of great house)	187
Bluff—Test Unit 66 (west of great house)	144
Chaco Canyon ^a	
Pueblo Alto (Roberts Test Pit 1)	893
Pueblo Alto (Roberts Test Pit 2)	637
Pueblo Alto (NPS Test Trench)	513
Pueblo Bonito (Roberts Test Pit 8 East Mound)	420
Pueblo Bonito (Roberts Test Pit 7 West Mound)	358
Chetro Kettl (Trash Mound Test Trench)	396
Penasco Blanco (Roberts Test Pit 1)	1,357
Penasco Blanco (Roberts Test Pit 2)	836
Penasco Blanco (Roberts Test Pit 3)	796
Pueblo de Arroyo (Parking Lot Test Pit)	228

^aData from Windes 1987b, table 8-14.

(like Bluff ceramicist Eric Blinman) count *all* sherds, so densities may not be comparable among analysts.

Bluff berm sherd densities are similar to those at the great house mounds in Chaco Canyon, which Stein and Lekson (1992) feel are the models for the fronting and flanking mounds at extracanyon great houses. In some ways, however, the Bluff encircling berm is not like extracanyon mounds described by Stein and Lekson. All our test units, regardless of position, contained cultural material of all types, including floral and faunal remains, ceramics, and chipped stone. There is no evidence that sterile soil or construction debris was used *exclusively* to construct any portion of the berm, as was the case for the encircling berms described by Stein and Lekson (at a long-lived site like Bluff, sterile soil might not have been readily available, however). Although ceramics were an extremely common component of the great house mounds in Chaco Canyon and of the Bluff berm, both contained other cultural remains, too.

The berm remains a bit of an enigma. It is a massive structure representing a significant amount of construction effort. Ceramics and other evidence suggest that the Bluff berm was constructed during the Chacoan era and that it continued to be used during the post-Chacoan era. The portion of the berm

southeast of the great house may have been constructed or reconstructed during the post-Chacoan era based on radiocarbon dates, and average sherd size lends some support to this reconstruction. Although this portion of the berm seems continuous, our two excavations into it (the Berm Trench and Test Unit 1), while only 10 m apart, did not show similar construction sequences. South of the trench, the berm has been partially destroyed by a modern road, so we will never know the extent of the late reconstruction of the berm. Test Unit 19 supports the idea of continued work on the berm, perhaps using redeposited trash from the Late Pueblo II and Early Pueblo III periods; the ceramics found in Test Unit 62 support continued use of the berm. While the berm flanking the great house on the southeast seems to have high ceramic densities like those at great house mounds in Chaco Canyon, in other ways it is not like the Chaco Canyon great house mounds. Furthermore, the composition of the Bluff berm is not like that of the largely sterile berms and mounds (except for fronting and flanking mounds) described by Stein and Lekson (1992).

Berms in Space and Time

Berms are assumed to be Chacoan-era features, yet the Bluff Great House berm was a massive undertaking that seems to have spanned both the Chacoan and the post-Chacoan eras. An examination of berms throughout the Chacoan region suggests that there may be both temporal *and* spatial variability in the occurrence of these features. Berms seem to be most highly developed south and west of Chaco Canyon, and the majority of berms here seem to date to the Chacoan era (Fowler and Stein 1992; Stein and Lekson 1992; Windes 1982). North of Chaco Canyon in the northern San Juan region, berms or earthen mounds of any kind are much less common (there are few great houses east of Chaco Canyon). They are found at the large post-Chacoan complex at Aztec Ruins and a few other sites (Bradley 1988; Dykeman and Langenfeld 1987; Hurst 2000; Stein and McKenna 1988). The lack of berms north of Chaco Canyon may be partly the result of loss due to modern development, but it is also possible that the northern San Juan region was never as well integrated into the Chacoan regional system as were areas to the south and west, in spite of attempts to reconstruct (Lekson 1999) or revive (Bradley 1996) the Chacoan regional system here.

Berms are well documented at sites south and west of Chaco Canyon. Illustrations in Fowler and Stein (1992) and Stein and Lekson (1992) show landscapes of road-related mounds and encircling berms at Chacoan-era great houses in east-central Arizona and west-central New Mexico (including sites in Manuelito Canyon, the Allentown Great House, the Navajo Springs Great House, and others). Most berms in this area seem to date to the Chacoan era, but some were apparently post-Chacoan. Although Fowler and Stein (1992) describe both Chacoan-era and post-Chacoan great houses, encircling berms seem to be largely confined to the Chacoan era. In fact, Fowler and Stein (1992:111) note that the "earthen component" is de-emphasized in the sites they describe and that encircling masonry walls are found instead. Based on his study of mounds at great houses just south of Chaco Canyon, Windes (1982) suggests that great houses built after A.D. 1100 tended not to have formal mounds (this is similar to the pattern found for Chaco Canyon great houses). On the other hand, the Hinkson Site, and presumably its encircling berm, seems to be post-Chacoan (Kintigh et al. 1996).

In the northern San Juan region, few berms have been reported (although the total number of great houses here is fewer than the number south and west of Chaco Canyon). Aztec Ruins has been suggested to be the new capital of the post-Chacoan world (Lekson 1999; see also Fowler and Stein 1992:119; Judge 1989), and if mounds or berms were an important part of Chacoan cosmology, we would expect to see a continuation of the form at Aztec. Mounds are found here but do not form encircling berms around any of the several post-Chacoan great houses that make up Aztec Ruins (Peter McKenna, personal communication, 2000). However, earthen architecture visible at Aztec Ruins today may have degraded because the complex is located in prime farmland and has been subject to extensive modern disturbance (Stein and McKenna 1988:63–65). Alternatively, the absence of berms may be an attempt to duplicate Chaco Canyon patterns where mounds were only found in front of great houses.

Away from Aztec, mounds, and especially encircling berms, are rare, although circumstantial evidence suggests that some may date to the post-Chacoan era. Encircling berms have been reported only from the Holmes Group, which has a post-Chacoan great house (Dykeman and Langen-

feld 1987), and Brewer Pueblo, which may have a great house dating to both the Chacoan and the post-Chacoan eras (Agenbroad 1978; Mark Varien, personal communication, 2001; see Figure 1). Mounds—but not encircling berms—are reported at Edge of the Cedars Ruin, a Chacoan-era great house (Hurst 2000:73–74), and at the Wallace Site, which dates to the Chacoan and post-Chacoan eras (Bradley 1988:8).

The apparent lack of berms or mounds in the northern San Juan region may indicate that this region was less well integrated into the Chacoan regional system than areas to the south and west were. Lekson (1999) believes that the attempt to continue the Chacoan regional system in the late twelfth and early thirteenth centuries with a new center at Aztec was short-lived. In a somewhat different reconstruction, Bradley (1996) suggests an early-thirteenth-century “revitalization movement” in the northern San Juan aimed at restoring the power of Chacoan ideas; it did not achieve long-term success. By the end of the post-Chacoan era, the entire northern San Juan and most adjacent regions had been completely abandoned. If the northern San Juan was poorly integrated into the Chacoan regional system, and if efforts to continue or “revive” the Chacoan system were not successful, then this may explain the lack of post-Chacoan berms in the region. A restructuring or revival of Chacoan ideas may provide one explanation for the continuing construction of the Bluff berm. Perhaps because the movement was short-lived, berms did not become an important part of post-Chacoan development at other sites. However, these ideas cannot be properly evaluated until we have a more detailed understanding of the nature of these features, especially their temporal and spatial distribution.

Conclusions

Ancestral Puebloan people created mounds of cultural debris that apparently became sacred places of renewal beginning at least as early as the Pueblo I period (A.D. 700–900), and similar attitudes toward what we would call “trash” continue to the present day among modern Pueblo people. This practice was most highly developed in the Chacoan era when huge mounds were built in front of great houses. Most scholars argue that the great house mounds were created during ceremonial events when large numbers

of people gathered in Chaco Canyon to construct the great houses and eventually discard quantities of construction debris and cultural material in the mounds (but see Wills 2001). Most remarkable are the mounds in front of Pueblo Bonito, the largest-known Chacoan great house, which were walled and surfaced, possibly to create a platform for ceremonial activities.

Outside Chaco Canyon, mounds create an elaborate cultural landscape. They often completely surround a great house or define segments of prehistoric roads as the roads enter the vicinity of a great house. The Bluff Great House berm, in the northern part of the Chacoan world, is one of only a few such features that have ever been excavated. It contains between 1 and 2 m of sometimes dense cultural fill that forms a semicircle around the front of the great house and a platform behind it. Although a series of depositional incidents can be seen in at least the part of the berm southeast of the great house, these are unlike the “event layers” found in the trash mound at Pueblo Alto in Chaco Canyon. Based on ^{14}C dating, much of this portion of the Bluff berm may have been constructed in the post-Chacoan era. Ceramics and other evidence from other parts of the berm are consistent with a Chacoan-era construction, with continued use in the post-Chacoan era.

Few extracanyon berms have been excavated or even described, but there are indications of temporal and spatial differences in these features across the ancient Chacoan world. The most highly developed berms are known south and west of Chaco Canyon. In both areas, berms are assumed to be Chacoan-era features, but at least one post-Chacoan berm is known at the Hinkson Site (Kintigh et al. 1996). In the northern San Juan region, where the Bluff Great House is located, berms are not common. If these were important elements of the Chacoan ritual landscape, their rarity in the northern San Juan might suggest that this area was less well integrated with the Chacoan regional system than were areas to the south during the Chacoan era. The possibility that a few of the berms in the northern San Juan, including the Bluff berm, were either partly or completely built during the post-Chacoan era supports suggestions of a continuation or revival of Chacoan ideas in this area. The paucity of such post-Chacoan features supports evidence that the post-Chacoan revival was short-lived and ultimately unsuccessful.

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Notes

1. Terminology used to describe earthen mounds in the Southwest has not been formalized. Inside Chaco Canyon, earthen mounds associated with great houses have often been called "trash mounds" (Windes 1987b), and mounds associated with small sites, variably "trash mounds" or "trash middens" (Truell 1986:143–144). Because the term *trash mound* implies a function (trash disposal) that may not be completely accurate for the mounds associated with great houses in Chaco Canyon, in this article, earthen mounds associated with great houses in Chaco Canyon are called "great house mounds." For earthen mounds associated with small sites, I will retain the term *trash midden*. In this article, I use *berm* to describe the earthen mounds that *surround* great houses outside Chaco Canyon (features also called *nazhas* by Stein and Lekson [1992]; see also Fowler et al. 1987) and *mound*

to describe an earthen mound adjacent to but not surrounding a great house.

2. Among the Hopi, masonry walls were sometimes laid without mortar during the dry season, and mortar was added during the wet season (Mindeleff 1891:137). Construction during the rainy season in Chaco Canyon, when water can pool on mesa tops, might have limited the number of long trips necessary to carry water to construct Pueblo Alto.

3. Fowler and Stein (1992) believe that the great house at Kin Hocho'i is built on a lower earthen platform. Similarly, at the Navajo Springs Great House, John Stein (personal communication, 2001) saw evidence of leveling with cut and fill to produce a low rectangular platform beneath the site area. The apparent platform behind Pueblo Bonito, noted above, is also intriguing. At Aztec Ruins, Peter McKenna (personal communication, 2001) has argued that a long wall and south-jutting wall stubs in the front of the West Ruin are remnants of a platform mound like that fronting Pueblo Bonito, but the Aztec West platform was removed by agricultural development.

4. Ceramics were analyzed by ceramicist Eric Blinman, Santa Fe.

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Notes

³ **Pink Chert, Projectile Points, and the Chacoan Regional System**

Catherine M. Cameron

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