Field Trip Report

Colloquium on Reburial of Archaeological Sites – Santa Fe, New Mexico

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By: Francois LeBlanc, Head, Field Projects

Introduction

The GCI in collaboration with ICCROM and the US National Park Service organized a very interesting and successful colloquium on “reburial” or “backfilling” of archaeological sites in Santa Fe, New Mexico from March 17-21. Forty professionals from diverse backgrounds and provenance participated.

What was this colloquium all about? Well, the recognition that the archaeological record is being destroyed at an accelerating rate by development pressures, the act of excavation itself, the passage of time, lack of maintenance, and increased visitation and use has spurred the development of preservation strategies to protect archaeological sites. One of them is to rebury the site.

Conservation and management interventions can reduce the rate of deterioration, but none of these can respond to the totality of deterioration processes so effectively as reburial of a site. In the last decade, reburial has emerged as one of the most viable and flexible strategies for preserving excavated archaeological remains that are not open for public presentation or cannot be actively maintained. Its purpose is to re-instate the original environment and thereby re-establish a state of equilibrium similar to that, which existed prior to the site’s “liberation”. In other words, if it has survived for centuries while it was buried, it should be able to survive for centuries if it is reburied after its been excavated.

To use a museum analogy, reburial represents a form of long-term “storage” for archaeological sites – the site’s integrity and values held in trust for future generations. When techniques have improved or resources are available for conservation, or when new research questions arise, the reburial can be reversed and the site once again exposed and examined.

The purpose of the colloquium was to gather together professionals from conservation, as well as allied fields such as soil sciences, engineering, and biodeterioration, who have been involved in planning and implementing reburial strategies or can contribute to a discussion of reburial as a method of protecting exposed archaeological remains. The themes, with a broad geographical scope, ranged from decision-making to technical matters. Through focused presentations and
discussions, there emerged a better understanding of the current status of reburial and the outstanding areas requiring future research and testing.

The colloquium was co-organized by the GCI, the National Park Service (Intermountain Region), and ICCROM. The colloquium was limited to approximately 40 participants and international in representation, including decision-makers and practitioners, who could address the rationale and implications of reburial in the larger economic and political context and/or who had carried out reburial projects, as well as representatives from specialized fields, who could contribute to the discussion of technical issues. The format consisted of overview presentations on important themes (The Decision to Rebury, The Reburial Environment, Technical Design of a Reburial Intervention, Testing and Long-term Monitoring Strategies), followed by case studies and discussions. A two-day field trip to Chaco Canyon and Aztec, where extensive, planned reburials have been undertaken stimulated discussion and brought forth the rationales, obstacles to and methods of reburial.

The proceedings of the colloquium will be selected, edited, peer-reviewed and published in a volume of *Conservation and Management of Archaeological Sites (CMAS)*, in cooperation with ICCROM, as were those of the colloquium on Protective Shelters.

The Organizing Committee for the Reburial Colloquium were: Jake Barrow (NPS), Dabney Ford (NPS), Michael Taylor (NPS) and Nicholas Stanley-Price (ICCMROM), J.M. Teutonico, Neville Agnew, Martha Demas, and Thomas Roby; the Project Coordinator was Michele Astorian.

Without giving a full account or summary of the entire colloquium, which is something that Martha and Neville will be doing, I would like to share with you some of the highlights or what I think are interesting points from the colloquium.

Theme 1: The decision to rebury

Martha introduced this theme. She said that the decision-making process for managing and conserving archaeological sites is increasingly accepted as being driven by a thorough assessment of values, physical condition of the resource, and the management context.

Laetoli, Tanzania

As an example, Martha explained that the decision to rebury the Laetoli track way in 1995-96 was accepted (albeit reluctantly) by the national authority as the only feasible option for saving the footprints.
For those not familiar with this site Laetoli is located in northern Tanzania. 3.6 million year ago, a few men and their domestic animals walked over an area where a volcano eruption had left soft ashes. Their footprints were imprinted into the soft ash that hardened shortly thereafter. The footprints were gradually covered with soil and vegetation and remained protected for all that time.

Archaeologist Mary Leahy discovered the footprints, called the “track way”, during the 1970s. They were studied, recorded, a cast was made and then, they were reburied. But no record of how they were reburied was kept. Vegetation started to grow over the site and in 1992, the GCI was asked to help with the re-excavation and conservation of the site.

The decision to rebury the Laetoli track way in 1995-96 was accepted (albeit reluctantly) by the national authority as the only feasible option for saving the footprints. However, acceptance was not the universal reaction. It was greeted with antipathy by many members of the scientific community; as an opportunity for a controversial story by the press; with incomprehension by the local Maasai inhabitants; and with indifference by the authorities responsible for the nature conservation area in which Laetoli was situated.

Opportunistically, the decision and its implementation also afforded a platform for contending political factions at the national level. Recognizing, negotiating, managing, and reconciling the differing agendas and perspectives became as central to the success and sustainability of the project as the technical design and implementation of the reburial.

**Todd Metzger**, Resource Manager from the National Park Service, made the point that in the US, the use of the term “reburial” is very much associated to the repatriation of human or funerary remains. He said that they prefer to use the term “backfilling”. It was agreed that within the context of this colloquium, both terms would be used to mean the same thing.

**Dabney Ford**, archaeologist from Chaco Culture National Historic Park, made the point that for the Navajos and other Indian cultures, leaving the site “alone” is preferred to other conservation
approaches. This is considered to be their “natural destiny”. Backfilling is considered an acceptable intervention because it corresponds the closest to the state in which the site was discovered. Dabney also discussed the concept of “benign neglect” and explained that for the site in Chaco, backfilling is an intervention that costs twice as much as normal repointing and maintenance. The decision to backfill is not one that is taken lightly.

**Mick Calarco**, Park Ranger for the City of San Diego, Park and Recreation Dept., presented the project of backfilling the Presidio. His presentation brought forward the fact that when the decision to backfill is taken, the question of how to interpret the site should be raised and dealt with at that particular moment of the planning process.

**Theme 2: The Reburial Environment**

**Pedogenic Impacts on Reburial of Archaeological Sites**

H. Curtis Monger, from New Mexico State University, explained that the endeavor to understand below-ground processes gave rise to pedology as a scientific discipline in Russia in the 1880s. Russian pedologists recognized from their studies of contrasting bioclimatic zones that a soil profile is a function of five factors: climate, biota, parent material, topography, and age. This model is not only applicable to soil formation studies, but also to the reburial of archaeological sites because these five factors establish the contest in which belowground physical, chemical and biological processes operate. Curtis’ paper was one of many that introduced me to new words and concepts!

**The Rose Theatre, London**

Mike Corfield discussed the case of the reburial of the Rose Theatre in London, UK. It was discovered in 1989 during pre-development excavations close to the south bank of the River Thames in Southwark, almost directly opposite St Paul’s Cathedral on the north side of the river in the City of London. At this time so called rescue excavations in advance of development had been the responsibility of English Heritage, who commissioned independent archaeological units, in this case the Museum of London Archaeological Services, to carry out the work. In normal circumstances the information from the site would be recovered, and the site would then be handed back to the developers. A watching brief would be undertaken during the development so that any further archaeology revealed could be recorded before it was destroyed.

The fate of the Theatre became a “cause célèbre”. Leading members of the acting profession and scholars protested that the site was one of enormous significance to Shakespearean studies and to the history of acting as it was in this theatre that Christopher Marlowe and Shakespeare presented many of their plays; Shakespeare was known to have performed on the stage, the remains of which were found.

Such was the furor that the Government instructed English Heritage to ensure that the site was preserved for possible future excavation and study. Negotiations were conducted with the developers, which led to the redesign of the proposed building.
After considerable debate it was decided to rebury the site so that the newly formed Rose Theatre Trust could raise the necessary money for the full preservation and display of the remains in situ. A reburial scheme was designed using a geotextile barrier over the archaeological surface; this was covered with iron and salt free silica sand (very expensive) to allow a meter of sand over the remains; the sand was covered with heavy duty polyethylene and the whole site was covered with a weak layer of cement. To ensure that the remains were kept saturated, a grid of leaky pipes connected to the water mains was laid, and to ensure that the correct preserving environment was maintained access tubes were installed for monitoring the level of the water table and to enable samples of water to be collected for analysis. Resistance cells were installed at various levels so that the degree of saturation of the covering layer and the theatre surface could be measured. The site conditions have been continuously monitored on a monthly basis ever since.

Theme 3: Technical Design of a Reburial Intervention

Laetoli, Tanzania

Neville and Martha presented the technical aspects of the reburial of the Laetoli track way. The project was undertaken over a six year period. (1993-1996) in four phases. These were assessment and initial treatment of the acacia trees growing on the original 1979 reburial mound; re-excavation, conservation, documentation, and reburial of the 30 meter long track way and stabilization of the site (1995-1996); assessment of the monitoring trench (1997); and finally design, production and installation of an exhibition about Laetoli at the Olduvai Gorge museum (1998).

The resulting design incorporated the following elements and materials. The overburden is a composite of multiple layers of geotextile (Typar 3410), Biobarrier, a polypropylene geotextile studded with nodules containing the root inhibitor trifluralin, Enkamat erosion control matting, fine and coarse sand fills, and local soil fill, mounded to a maximum height of approximately one meter and capped with lava boulders. Locally available soils (a total of 77 m³) were used for the bulk fills, sieved to achieve appropriate granular size and remove organic material. Site4 stabilization was undertaken to control erosion of the mound by seasonal rains. A monitoring and maintenance plan was created for department of antiquities staff and local site guardians to carry out.

Reburial of Maya Stucco Friezes

Eric Hansen and Carolina Castellanos jointly presented this topic. They said that conservation of Maya stucco relief or friezes in humid tropical conditions has posed significant challenges for professionals in the field. Deterioration results not only from climatic conditions but also from the lack of maintenance, abandonment of sites and vandalism, as well as other context-related issues, such as limited financial and human resources for the implementation of long-term programs.

Conservation issues also are related to efficacy and availability of materials and to the theoretical implications of interventions. In that sense, a major topic of discussion is that of reburial of decorated surfaces. It is agreed by professionals in the field that reburial is often one of the best conservation options, particularly when adequate technology or resources are not available.
However, in the case of the Maya region, political and economic interests often preclude such conservation decisions.

The opening of a site or the exposure of decorated surfaces is not necessarily determined by the specialists on site: governments often impose decisions based on tourist potential or public interests. In most cases, reburial has only been considered in extreme situations, as the final option before the potential loss of highly valued decorative elements.

An interesting example shown was the reburial intervention of Maya stucco friezes at Xunantunich in Belize. The original friezes were exposed, studied, cleaned and reburied while a copy was made and exposed on the surface of the back fill for tourists to admire.

Mug House, Mesa Verde National Park
John Fidler from English Heritage, presented the campaign to study, record, assess, conserve, protect and publish results from Mug House, a 14th century stone built cliff dwelling on Weatherill Mesa at Mesa Verde National Park, USA. The project was undertaken under the direction of the University of Pennsylvania in collaborative agreement with the US National Park Service.

Having established the types and degree of erosion of the site in relation to the existing and past history of condition of the plasters, and their vulnerabilities, a temporary winter shelter “Kiva Cosy” was devised and installed and its protecting behavior monitored for a further season.

The shelter raised the air temperature sufficiently against the plaster to protect it from frost damage whilst the water repellent (but vapor permeable) covering kept driving rain and snow melt off the delicate surfaces

Theme 4: Testing and Long-term Monitoring Strategies

Earthen Walls and Murals at Catalhoyuk, Turkey
Frank Matero from the Graduate Program in Historic Preservation at University of Pennsylvania presented this interesting project.

The discovery and excavation of Çatalhöyük in central Anatolia, Turkey by James Mellaart from 1961–65 immediately gained world attention as a site unique for its great size, complexity, and enormous time depths (9,000 years old) as well as for the amount and quality of finds discovered. Cited among its many “firsts” were the largest Neolithic urban settlement and most extensive
mud brick architecture found to date as well as the unprecedented discovery of highly sophisticated mural paintings and painted plaster relief sculpture.

At Çatalhöyük dwellings were constructed of large mud brick (1 meter in length) with timber posts and beams on a modular rectangular plan. Multiple layers of plaster made from locally available marley soils coated the walls. Many of the interior spaces contained elaborate plaster relief and wall paintings, all of which indicate an enigmatic symbolism. Here a civilization existed with sophisticated artistic and technological ability and complex religious beliefs. These monumental components – buildings, paintings and relief sculpture – were immediately understood as significant features of the site; however their physical preservation proved challenging and without precedent.

Conclusion
There were many more interesting presentations. Just to name a few:

- Monitoring buried mosaics at Chedworth Roman Villa (UK) by John Stewart;
- Reburial Research: Two design concepts for field testing: by Neville Agnew, Charles Selwitz and Rachel Burch;
- Monitoring through replicating the reburial: The Laetoli Track Way: by Neville Agnew and Martha Demas;
- Overview of technologies for soil moisture monitoring: by Shin Maekawa;
- A structural solution for differential fill levels in partial reburial: by Brian Culpepper, Jake Barrow, Preston Fisher, and Angelyn Bass Rivera;
- Chaco Canyon Reburial Project: by Neville Agnew, Robert Banchett, Martha Demas, Dabney Ford, Shin Maekawa, and Michael Taylor;

After two solid days of presentations, the participants visited two US National Historic Parks, Chaco Culture and Aztec Ruins. They concluded their meetings by discussing future opportunities for research and development. Because of prior commitments, I could not participate to this part of the colloquium. Summary of these activities and recommendations will be discussed in the colloquium’s official report.

The colloquium was much appreciated by all participants. It certainly made a strong statement to the effect that a great deal of testing and research is still required to adequately understand reburial or backfilling as a technique to protect our archaeological heritage for future generations.

Santa Fe Brief History

In this land where water is sacred, history laps against our dry shores like ripples in a mighty river. Pre-historic and historic events—wandering tribes invading from the north, Spanish and Mexicans from the south, other Europeans from the east—are islands in that stream, dividing it into rivulets that reunite farther along.

First came the Folsom Paleo-Indians, who left behind bison bones and fluted projectile points undiscovered until the early 1900s, 9,000 to 10,000 years later. The river valleys west of their hunting grounds later flooded with refugees
from the declining Four Corners Anasazi cultures. Sometime between A.D. 1130 and 1180, the Anasazi drifted from their high-walled towns to evolve into today’s Pueblo Indians, so named by early Spanish explorers because they lived in land-based communities much like the villages, or *pueblos*, of home. Culturally similar American Indians, the Mogollón, lived in today’s Gila National Forest.

On this relatively placid scene from the north burst the Southwest’s latest-arriving Indians, the Athapascans, dividing into two related groups: Apache and Navajo. As the tribes sorted out territorial differences through trading and raiding, a new element entered the cultural mix on a previously unknown animal, the horse. The Spanish had arrived—with soldiers and settlers accompanied by priests, the well-known Spanish combination of cross and sword. Although there were several previous attempts at exploring Mexico del Norte’s wilderness, the most successful one was engineered by Don Juan de Oñate, who lost a considerable fortune outfitting his *entrada*.

In 1598, his soldiers, oxcarts and livestock arrived at Caypa, one of two Pueblo villages at the confluence of the Río Chama and the Río Grande, north of present-day Española. He soon moved across the river to Yungueingge (Tewa for mockingbird place), a now-ruined pueblo he renamed San Gabriel del Yunque, the first Spanish capital of New Mexico. New Mexico’s third governor, Don Pedro de Peralta, founded a new capital, Santa Fe, in 1610. The fortified *villa real* (royal village) occupied the site of an early Tanoan Indian Pueblo and a more recent Spanish settlement. Things hummed along, with Spanish priests converting Indians, and settlers pouring into the remote colony. But some of the priests became overzealous, and the economic tribute system enslaved the Indians. In 1680, led by Taos Pueblo, they revolted, killing many of the 3,500 settlers strung out from Santa Cruz de la Cañada (near Española) to Socorro and driving the rest south to El Paso del Norte (El Paso).

Both Spanish settlers and Pueblos survived generations of nomadic Indian raids through alliances that included intermarriage—which lends New Mexico its unique mestizaje culture—and through trade fairs, common by the 1790s from Taos to El Paso. One of the fairs’ major functions was to ransom Spanish settlers abducted in Indian raids or to buy servants, usually Indians captured by other Indians. These freed Indians, known as genízaros, were Christianized and could, within three generations totally shed the stigma of slavery. They soon became so numerous that the Spanish built them villages at Abiquiú, Santa Fe’s Analco neighborhood, San Miguel del Vado, Ojo Caliente and elsewhere. As the buffer between Spanish and Pueblo settlements and the raiding nomads, genízaros and their descendants, mostly stockmen and farmers, led the last great Hispano territorial expansions. They founded such towns as Las Vegas and Anton Chico, spreading as far north as present-day Antonito and Trinidad, Colo., into the Texas and Oklahoma panhandles and west into east-central Arizona.
In 1824, New Mexico briefly became a Mexican territory, but in 1846 U.S. Gen. Stephen Watts Kearny's troops followed Anglo merchants down the Santa Fe Trail to occupy New Mexico, which became an American territory.

An 1847 revolt by Mexican loyalists precipitated battles at Santa Cruz and massacres at Mora and Taos, but eventually armed resistance ceased.

During the U.S. Civil War, New Mexico Volunteers were among the troops proving their Union loyalties by helping cut the supply lines of invading Confederates at Apache Pass, near today's Glorieta.

Two decades later the railroads steamed in, forever changing New Mexico. Commerce improved, but under the imported U.S. legal system, dishonest Anglo lawyers defrauded many natives of land they had held for centuries.

Meanwhile, cattle barons such as John Chisum started rounding up longhorns along the southeastern plains, often battling native landholders. Chisum also was involved in the bloody Lincoln County Wars, a conflict between two mercantile houses that involved such notables as Pat Garrett, Billy the Kid, and Gov. Lew Wallace, who wrote the novel *Ben Hur*.

Despite injustices, New Mexicans remained patriotically American. In 1898, Teddy Roosevelt recruited his "Rough Riders" from New Mexico, many from Las Vegas. In 1912 New Mexico became the 47th state. The Great Depression almost eliminated the isolated villages--heart of the Hispano homeland. But New Deal programs helped villagers survive.

During World War II, two New Mexico regiments endured the Bataan Death March in the Philippines. Navajo and other Indian "code talkers" used their native languages to help confuse the Japanese. Things heated up again in the politically tumultuous 1960s, when activists led by Reies Lopez Tijerina attempted to reclaim Spanish land grants. After several confrontations, including an armed raid on the Tierra Amarilla courthouse, the movement quieted.

Today, thanks to New Deal dams, dairies thrive where Comanches once raided along the lower Pecos River. The lush Mesilla Valley produces alfalfa hay, pecans, onions and New Mexico's staple, the chile. But with agriculture and a growing population demanding more, water is an increasingly scarce resource in New Mexico. New Mexicans, while welcoming planned growth, realize we must take care that the waves of history don't dry up on our desert shores.
IMAGES OF SANTA FE, NEW MEXICO

St. Francis Cathedral

Interior of St. Francis Cathedral

Museum of American Indian Art

Original adobe construction

The Plaza

Street vendors

Typical ceramic and jewelry

Santa Fe history on the sidewalks