

ANCIENT URBANITES

By Lizzie Wade

Archaeologists are excavating a neighborhood outside of downtown Teotihuacan to understand what daily life was like in Mesoamerica's largest city.

Researchers photograph and map excavation trenches at Tlaljinga. A student in the left of the picture holds a boom with a camera attached to it to take overhead shots of the trench.

It was the rainy season in central Mexico and David Carballo was sweeping the stone floor, trying to clear away the dust before it had a chance to turn to mud. It was a losing proposition given a summer full of torrential downpours. "It's a nightmare when it rains overnight. And it pretty much rains every night," said Gina Buckley-Yost, a graduate student from Penn State. And the floor Carballo was standing on presents a more daunting challenge than most: it hasn't been cleaned for close to 2,000 years.

Carballo, an archaeologist with Boston University, suspects that the last people to sweep this floor witnessed the growth of Teotihuacan, an ancient metropolis whose ruins lie about 30 miles outside of modern day Mexico City.

"We're getting to some of the earliest layers," he said as he used a trowel to expertly flick the loosely packed dirt out of neat, small holes that probably once held posts supporting a thatched roof and walls. The people who built this floor out of crushed tepetate, a local volcanic tuff, probably watched as the largest city in the Americas expanded into their neighborhood, absorbing them into a complex political structure and turning them into some of central Mexico's first urbanites.

At its height, which spanned from about 100 B.C. to A.D. 650, Teotihuacan was a metropolis—a rarity in ancient Mesoamerica, where cities tended to be sprawling, low-density affairs situated within vast forests and tracts of farmland. In

Teotihuacan, however, the Pyramids of the Sun and Moon towered over a downtown that had likely been cleared of significant vegetation. The monuments were connected to one another and the rest of the city by the 150-foot-wide, roughly three-mile-long Avenue of the Dead, which cut through the urban landscape at precisely 15.5 degrees east of north.

More than 2,000 apartment compounds, like the one the archaeologists are excavating, fanned out from the thoroughfare, arranged in a rigid grid system that rivals New York City's or Chicago's in its regularity and structure. Each housed at least three families, with an average of 40-60 people living there at any given time. That allowed the

city to pack about 100,000 residents—including traders and migrants from hundreds of miles away—into a mere 12-square miles, a degree of density seen nowhere else in ancient Mesoamerica. Before its mysterious political collapse and subsequent abandonment, Teotihuacan was the largest city in the Americas and the sixth largest in the world.

The political structure of Teotihuacan is still hotly debated, with some archaeologists believing it was ruled by a god-like king and others arguing for a governing council made up of members from elite families. But ever since the 1960s, when the pioneering Teotihuacan Mapping Project used surface collection of artifacts to reveal the staggering size and unprecedented organization of the



These ceramic figurines were recovered from the site.

city, archaeologists have thought that this cosmopolitan metropolis could not have arisen without some kind of strong central authority responsible for, among other things, the design and construction of the urban environment. "The scale of planning in this city seems pretty unparalleled for the ancient world," Carballo said. As a result, archaeologists have assumed Teotihuacan was a "very centralized state that was involved in the intimate details of daily life."

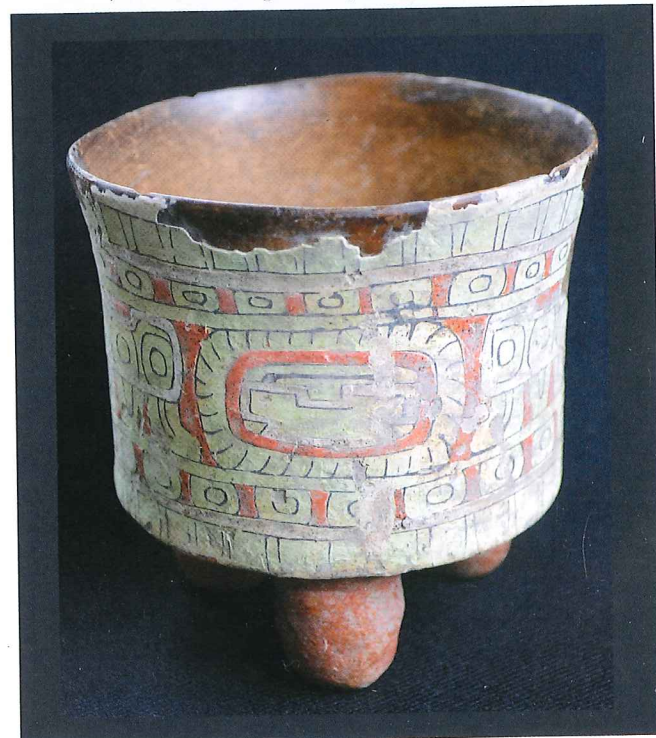
Carballo and Ken Hirth, an archaeologist from Penn State University, are directing an excavation in the Tlajinga District, a neighborhood of lower-status craftspeople and artisans near the southern edge of the Avenue of the Dead. From here, the pyramids of the Sun and Moon peek out over the trees, nearly blending into the mountainous landscape around them. The view from Tlajinga is "like someone from

Queens looking at the Manhattan skyline," Carballo said. It was part of the city, but far from the center of power and its political concerns.

Over the next 500 years or so, seven more floors were built above the stone floor Carballo was sweeping. By excavating each of them, the archaeologists hope to learn what daily life was like for this home's occupants at different points in Teotihuacan's history. Given Tlajinga's geographic and symbolic distance from central Teotihuacan, the archaeologists are focused on how the lives of Tlajinga's residents intersected with the politics and culture of the city as a whole. Did they make their own economic and cultural choices, or was every decision dictated by the city's central government?

Questions like those first interested Carballo when he was an undergraduate political science major. After a trip to Teotihuacan with Colgate University archaeoastronomer Anthony Aveni and a few seasons of fieldwork at Copán, a Maya capital in Honduras, Carballo settled on a career in archaeology as a means to explore those lines of inquiry. "It's a discipline that allows you to think about those big questions of social organization and their change over time," he said. "And it's fun to dig in the dirt."

After 10 weeks of digging at Tlajinga last summer, the archaeologists uncovered evidence of craft production, religious rituals, construction, and human burials in a single apartment compound. They found pottery sherds and other, less common artifacts, such as seashells, ceramic figurines, and beads and other adornments. The most abundant types of artifacts were construction tools, such as the myriad pumice floats, which were probably used to even out the wet



Researchers also uncovered a cylinder tripod vessel with painted stucco.

ALICIA VERA

DAVID CARBALLO

concrete that the residents made by mixing lime with clay, mud, gravel, and sap from the nopal cactus.

He won't know the tools' precise dates or what they were used for until he is able to analyze the microscopic remains of material left on their surfaces. For now, he's sure of only one thing: there are too many of them to build just one house. He suspects that the people who lived in this apartment compound might have been construction workers involved in building projects throughout the city.

Construction was probably not a particularly high-status job, and Tlajinga was known to be a lower-status neighborhood. So Carballo was surprised when, earlier in the season, he found one of the few intact examples of Teotihuacan's iconic greenstone masks resting on a stone patio that was probably built during the city's last decades. How did such a high-status good end up here, so far from the elite palaces and temples of downtown? But he has since discovered that the residents had access to quite a few nice things. The seashells, for example, came from Mexico's coasts hundreds of miles away, and some of the household's pottery was imported from southern Puebla, a region that continues to be famous for its clays.

In 2013, while excavating a nearby compound that appeared to have been occupied by obsidian craftspeople, Carballo uncovered a stout, three-legged vessel that had been covered with stucco and delicately painted. As the vessel's

ornate outer layer wore off with use, its owners repaired it by filling in the cracks with new stucco, before ritualistically burying it in their home. "That gives a great window into a family that was of lower status, but had some access to nicer stuff and had to take care of it," he said. "In terms of thinking of Teotihuacan's broader economy, we're seeing that lower status individuals had access to pretty much the range of goods or commodities that circulate within the city, but in more limited quantities consistent with their purchasing power. It's indirect evidence of a pretty strong market economy."

The archaeologists' work at Tlajinga is complicating the narrative of top-down planning and control in Mesoamerica's largest city. "I think that there's reason to believe that people were making their own decisions and planning their own neighborhoods," Carballo said.

Take the idea of cookie-cutter apartment compounds planned and built by the central government. Apartment living does appear to spring up at more or less the same time across the city, which suggests a certain amount of state involvement and direction. The apartment compounds close to downtown are almost perfect squares laid out neatly on the city's grid, a striking level of regularity that has been taken as evidence of strong central planning and authority. The Teotihuacan Mapping Project assumed this level



Archaeologists clean postholes in the floor of an ancient residence in Tlajinga.

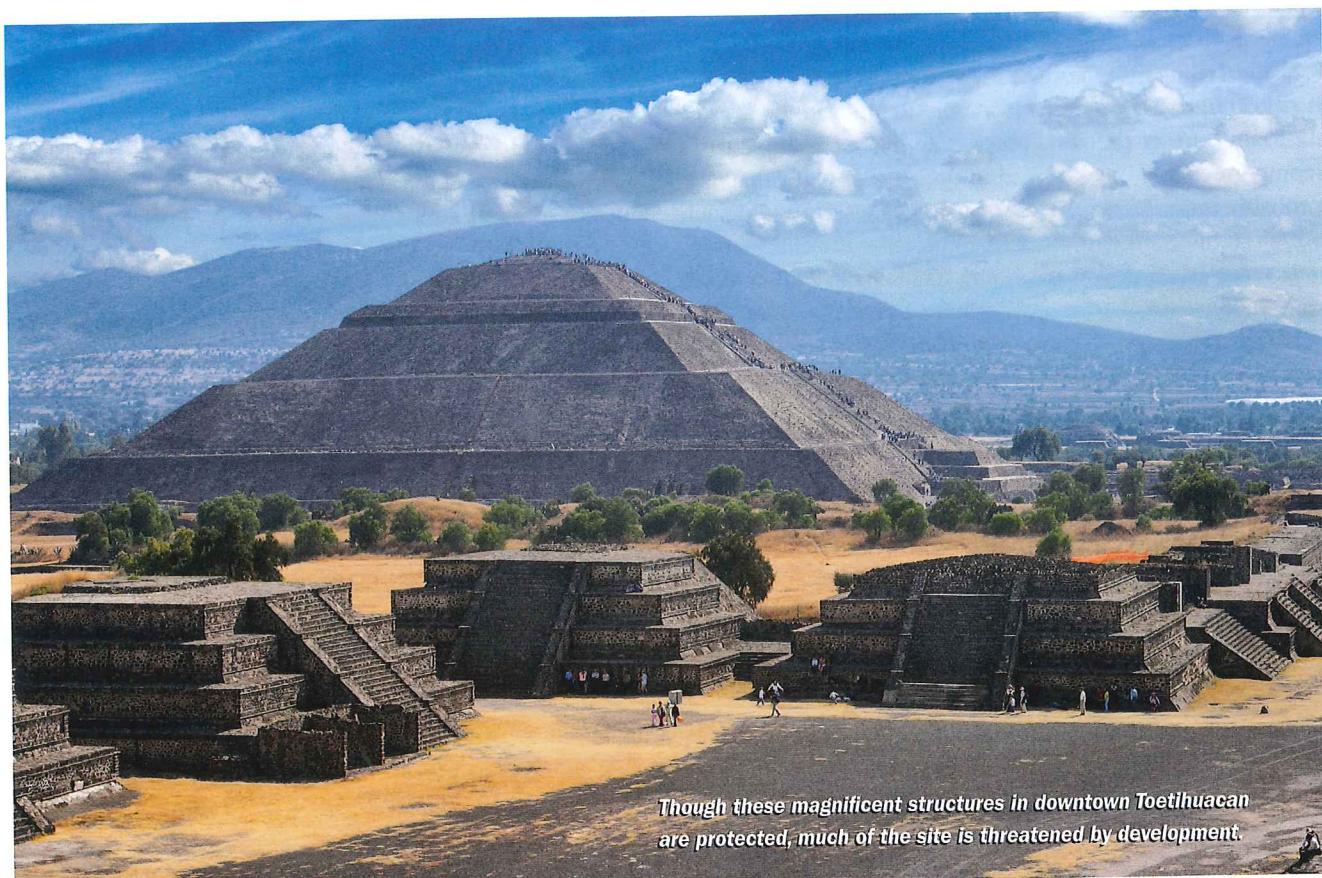
american archaeology

of regularity extended throughout the city and that all the apartment compounds had the same shape.

But now that compounds in Tlajinga and other peripheral districts are being excavated—often with the help of remote sensing technology that can accurately map the remains of stone architecture even before it is uncovered—it appears that Teotihuacan’s residential architecture is “much less regular than the 1960s’ map would indicate,” said Carballo. Once

you get away from the downtown neighborhoods, “no two [apartment compounds] are identical, probably.”

The materials used to construct the apartments also varied, and given that degree of local variability, Carballo is skeptical of any model that suggests “these things are completely state-planned and state-constructed.” But that’s not to say state authority was completely absent from Teotihuacan. Given the city’s complexity, pitting top-down, centralized



Though these magnificent structures in downtown Teotihuacan are protected, much of the site is threatened by development.

ISTOCK IMAGES

The Threat to Teotihuacan

Every Friday in the Tlajinga District, David Carballo stops digging early and gathers his grad students and workers together for a soccer match. They found a great spot to play nearby that’s just the right size and perfectly flat. Its evenness is no accident of nature. Their soccer field is right on top of an unexcavated area of the Avenue of the Dead, Teotihuacan’s main thoroughfare.

Carballo and his team are not the only ones to find a modern use for the ancient urban landscape. Although Teotihuacan experienced a political collapse around A.D. 550, people never stopped living around and on top of its ruins. Today, the Valley of Teotihuacan’s proximity to rapidly expanding Mexico City makes it an attractive place to settle. The area is currently home to 70,000 people; by 2025, the local population is expected to reach 120,000, said Jaime Delgado, an archaeologist with Mexico’s National Institute of Anthropology and History (INAH) who works on conservation at Teotihuacan.

When it comes to archaeological conservation, playing soccer on top of buried ruins is one thing. Building houses,

plowing fields, and running sewers through them is another. Worse, much of the modern development is done illegally, flouting INAH regulations and laws protecting Mexico’s cultural patrimony. At this point, Delgado said, 49 percent of Teotihuacan’s archaeological remains have been destroyed or rendered inaccessible. “We’re losing the most important city in the Americas.”

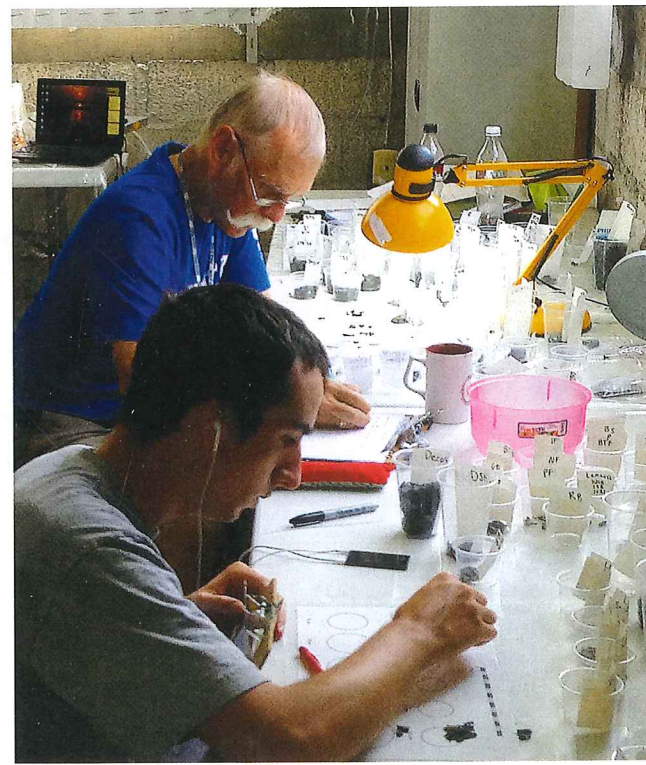
A mere seven percent of Teotihuacan’s original 12-square-mile expanse falls within the protected tourist zone, which covers only the city’s ceremonial downtown and most important pyramids. No ancient residential neighborhoods are formally protected, which limits the information available to archaeologists like Carballo, who are interested in the daily lives of Teotihuacan’s middle- and lower-status residents. “We need to know about the people who were living there, not just their monuments,” said Mark Michel, president of The Archaeological Conservancy. “That information is going to be lost unless the Mexican government moves quickly to protect the entire site.” —Lizzie Wade

control against bottom-up, local processes is “setting up a false dichotomy,” he said. “It’s obviously going to be a little of both.”

Carballo may have found at least one concrete manifestation of the connection between the state and the residents of the apartment compound. In an earlier construction phase a few feet below the site’s last building, the compound’s architecture appears to be oriented to 19 degrees east of north, nearly four degrees off from the standard Teotihuacan grid. Then, during the last construction episode, the apartment’s adobe walls were perfectly aligned with the Avenue of the Dead and the rest of the city. “Was there a city ordinance?” Carballo wondered. If so, could it have been related to a larger political shift resonating throughout the city?

To determine the reasons for the alignment shift, the archaeologists will need to date each construction episode in the apartment compound. They’ve found enough organic remains—of wood, bone, and potentially even microscopic food remains embedded in kitchenware—to radiocarbon date some of the floors. Perhaps the date of the alignment shift will correspond with a known change in the city’s political structure. Or perhaps it won’t, in which case the shift could be a result of local, rather than centralized, planning.

Carballo and Hirth recovered well over a million pieces of obsidian from another Tlajinga apartment compound they excavated in 2013. Most of these pieces are manufacturing debris, but they’ve also found blades that were used to make other tools. Each piece must be sorted and categorized, a task that Hirth and four students have barely made a dent in thus far.



Ken Hirth (blue shirt) and a student analyze obsidian artifacts from the Tlajinga workshop in their laboratory.

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David Carballo has codirected the project since 2012.

The blades were flaked, one by one, off of larger cone-shaped obsidian cores. Skilled artisans would be able to turn one core into hundreds of blades in just over a day, Hirth estimated. He has spent years mastering those ancient artisans’ techniques in order to understand their work. For example, the production of points and blades that served martial and ritual purposes created different kinds of debris than the production of blades made for domestic tasks like processing food. But the differences are subtle, and it’s hard to recognize them without replicating the process, Hirth said. “The technique is not just to look at the attribute and say okay, this was made with a hammer,” he explained. “It’s to say, can we make this with a hammer?”

Because of such factors as its distance from downtown Teotihuacan and the domestic tools it produced—state-run obsidian workshops, according to Carballo, tend to have weapons, ritual items, and fancy adornments—the archaeologists believe they’ve discovered an obsidian workshop that wasn’t state controlled. That strengthens the argument that the city had a market economy and “households were in business for themselves,” Hirth said.

The kind of experimental archaeology he’s practicing can also provide intimate glimpses into the daily lives of these workers. Shaping obsidian can be an arduous, painful task, especially for beginners. “When we do experiments we’re constantly bleeding because this stuff is extremely sharp,” Hirth said. From sweeping floors to flaking tools, Carballo and Hirth aren’t just reconstructing ancient lives. In some ways, they’re reliving them.

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