

Studying ancient architectural artifacts in Greece

September 23 2019, by Louisa Shepard



On her first visit to Greece, and her first time traveling alone, Elhanbaly visited the Acropolis in Athens. Credit: University of Pennsylvania

An architecture major who also has a talent for drawing, Penn junior Zahra Elhanbaly is helping her history of art professor pursue the mystery of surprisingly large architectural artifacts found at the bottom of the Aegean Sea.

The carved capitals they are studying are made of marble discovered in the harbor of the Greek island of Paros. At about 2 meters square, they are on the scale of those topping columns at the Parthenon and date to the same period, but their history is unknown.

Mantha Zarmakoupi, an assistant professor, conducted her research this summer on Paros where the artifacts are stored. Elhanbaly, who is from Aliso Viejo, California, accompanied her for two weeks and was tasked with creating highly detailed architectural renderings.

The opportunity was made possible through a student internship supported by the Penn Undergraduate Research Mentoring Program, which includes a stipend to cover living and travel costs.

"Mantha has already done exciting and innovative archaeological work in Italy, Greece, and Turkey, and now she is venturing boldly into underwater areas," says Michael Leja, chair of the History of Art Department. "It's wonderful that students like Zahra have the opportunity to share in the remarkable discoveries she has been making and to make their own contributions to the public presentation of those discoveries."



Zahra Elhanbaly (left) worked with art history's Mantha Zarmakoupi on an architecture research project in Greece during the summer. She presented her work at the Research Expo in September, sponsored by the Center for Undergraduate Research and Fellowships. Credit: University of Pennsylvania

Elhanbaly, who is also pursuing a minor in art history, took Zarmakoupi's Architect and History course last year. "I've always been interested in conservation and architectural restoration, preserving older buildings, and reconstructing them," she says.

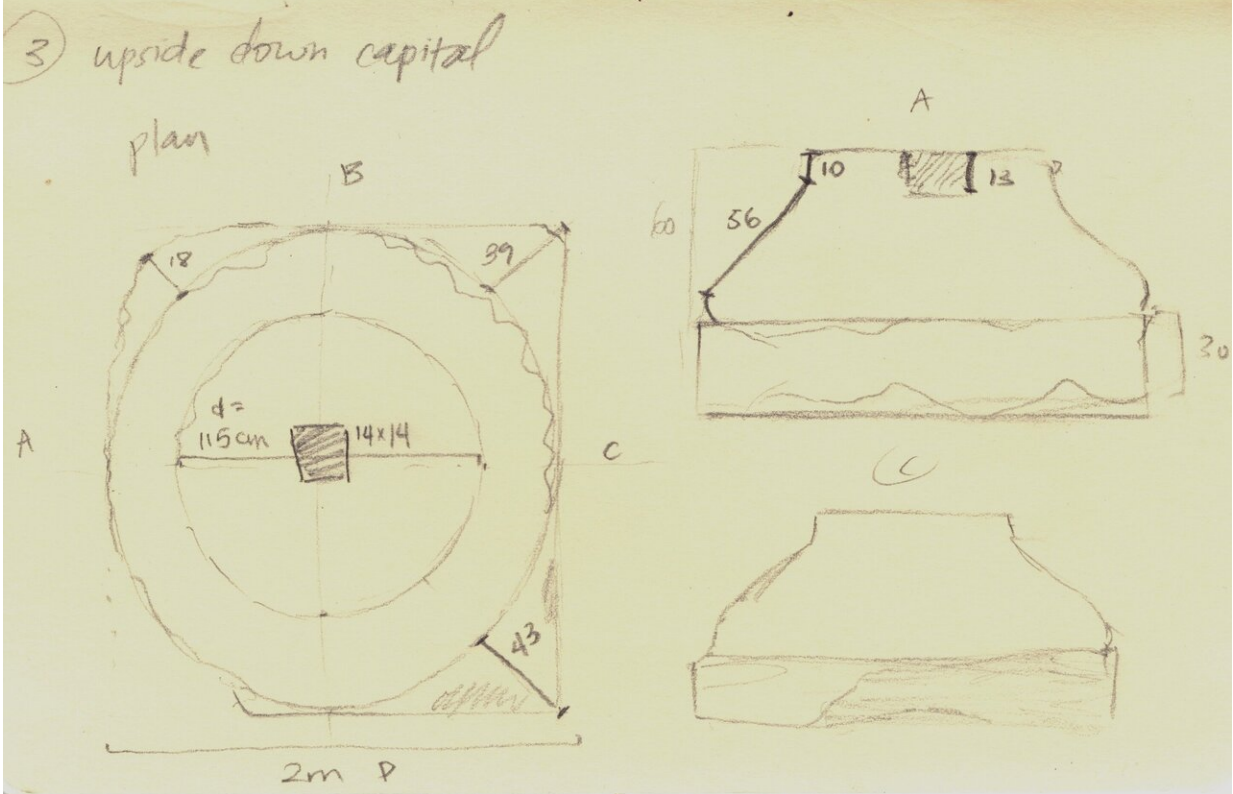
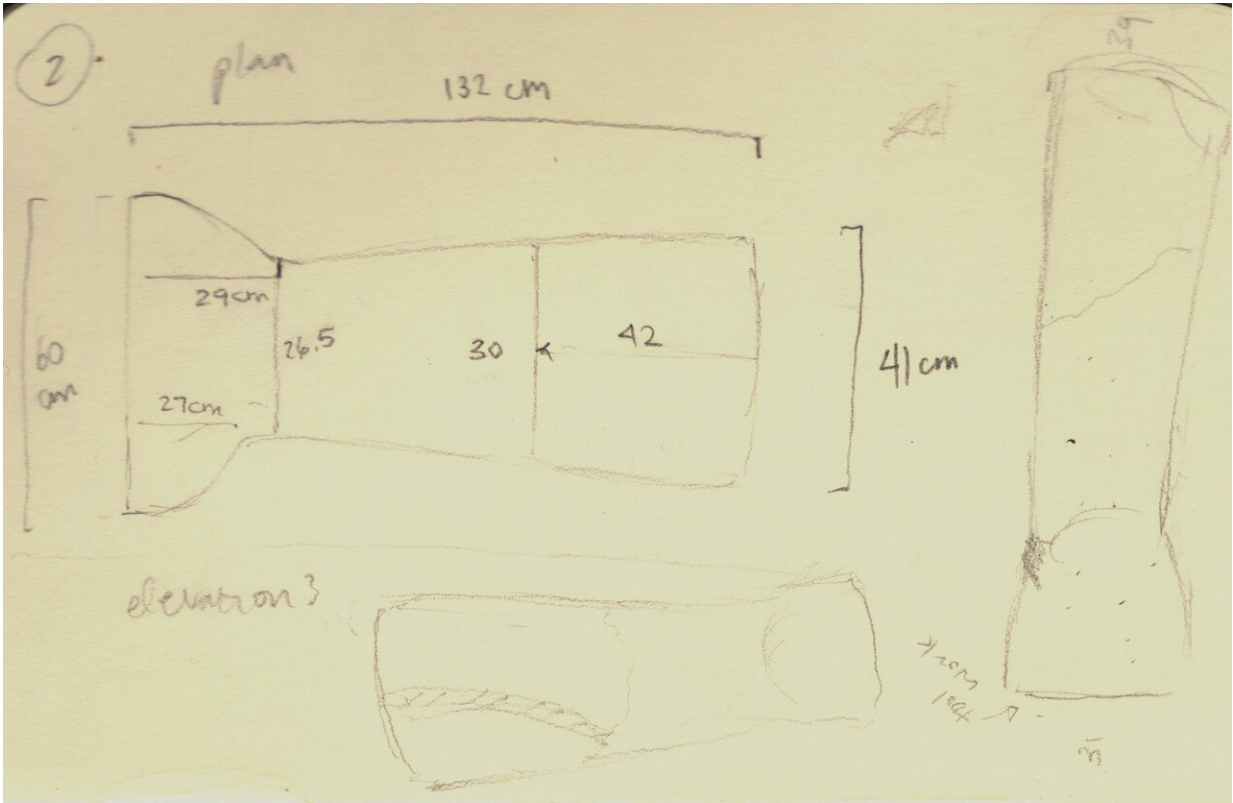
The two worked together in the Paros storeroom that holds the hundreds of objects excavated from the harbor. They focused on the three large capitals, the piece at the top of a column that connects it to the structure

above.

"Part of the experience was talking to professors about their theories on this piece. Was it a monument that was destroyed, or planned and never built, or had they made piece and decided not to use it?" Elhanbaly says. "We were looking really closely at all the markings asking what could have happened?"

Her drawings, both by hand and by computer, document each mark, all clues to the capitals' past and purpose. Original carving tool marks, damage from moving, corrosion from the water, shells and fossilized worms on the surface—she chronicled it all in hand-drawn sketches, sophisticated architectural elevations, and in a series of photographs.

"The first approach to this was documenting what we see, putting some priority on what is from antiquity and what is from recent years," Zarmakoupi says. "The information you get from a drawing you really can't get from a photograph."



Elhanbaly made detailed, hand-drawn, pencil sketches of the artifacts. Credit: University of Pennsylvania

The capitals date to the middle of the 5th century BCE, and represent the Doric Order of classical architecture of ancient Greece and Rome. She says that from the relatively small pieces of architecture her team can extrapolate what they could have been a part of centuries ago.

"My goal is to understand the story that these capitals tell us. What is the monument that they belonged to? How long was this monument in use? Where do they fit into our understanding of the Doric Order?" Zarmakoupi says.

"I find it fascinating that from this Lego-like piece, through the incisions and small imprints and workmanship, you can understand the processes of its construction and placement. The study of the surface of the capital will allow me to analyze how it was connected with other parts we don't have," Zarmakoupi says. "It will also enable me to reconstruct its afterlife as a ruin. The marks on this marble allow me to trace its story in a way."

Zarmakoupi was born in Athens, and she and Elhanbaly stayed in her mother's summer house in Paros during their research. Zarmakoupi will be teaching a Penn Global Seminar, *The Parthenon: The Many Lives of a Monument*, in the spring semester that will also include travel to Greece.

An architect by training, Zarmakoupi earned a degree in architectural design from the National University of Athens, a master's in history and theory of architecture at Harvard University, and a master's and Ph.D. in classical archaeology at the University of Oxford. Her work addresses

the broader social, economic, and cultural conditions underpinning the production of ancient art, architecture, and urbanism. Her expertise is actually in Roman architecture—her most recent book is titled "[Designing for Luxury on the Bay of Naples \(c. 100 BCE—79 CE\): Villas and Landscapes.](#)"



The two focused on three large pieces, including two “capitals,” which were between the top of a column, that measured 2 meters square. Credit: University of Pennsylvania

Among her many ongoing research projects is one focused on an underwater fieldwork survey around the Delos and Rheneia islands in Greece, and another around the islands of Levitha, Kinaros, and Maura

in the central Aegean Sea. The project on Paros fits into her other research involving ancient architecture but is different because it is her first to focus on monumental architecture.

The marble mined in Paros is distinctive, known for its reflective and translucent quality, a favorite for monuments. The pair visited the quarries in Paros where the marble was mined—that marble had the same tool marks at the ancient artifacts they were studying.

"It was such an old space and where a lot of history started, and it is still being used today," Elhanbaly says. "You could hear the stone, it vibrated. It is hard to describe. You could hear the walls around you. It was the craziest thing every seen or felt."

The internship was a chance for Elhanbaly to travel by herself for the first time. Although she has visited relatives in Egypt, where her parents are from, she had never been to Greece. Before taking the ferry to Paros, she spent three days in Athens.

"I got to see some of the old villages and towns with narrow streets and shops, and took a hike near the Acropolis and could see all of Athens, the Parthenon, and other ancient buildings," she said. "It was so nice to see it in person and notice all the things we talked about in class."



Elhanbaly also made architectural renderings using computer programs. Credit: University of Pennsylvania

The two will continue to work on the Paros project throughout the school year to prepare for Zarmakoupi to return to Paros next summer. Zarmakoupi is preparing a volume of essays that will include Elhanbaly's architectural renderings, drawings, and photographs.

Elhanbaly is in the Architecture Club at Penn and is the social chair of the Muslim Student Association at Penn. She also is a writing tutor at the Marks Family Writing Center. In the spring, she will continue her traveling, going to London to study at the Architecture Association School for Architecture for a semester.

"Seeing [architecture](#) around the world, seeing other parts of the world, is an inspiration," she says. "I want to think about how I might use this in the future."

Provided by University of Pennsylvania

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