Jacopo Bonetto: Using
new
Technologies to
DISCOVER ANCIENT COMMUNITIES

Together with his

students, Jacopo

Bonetto rebuilds

ancient societies using

the design tools in

Vectorworks software.

Photo courtesy of Gianni Alvito, Teravista

Aerial view of the eastern part of the peninsula of Nora.
The Roman forum and the medieval tower of Coltellazzo are visible.

Jacopo Bonetto, Ruggero Pintus and other archaeologists and engineers during the excavation of a Roman underground cistern conducted by laser scan.

With five published historical volumes to his credit, University of Padua Associate Professor Jacopo Bonetto has a profound understanding of Greek and Roman archaeology. His latest adventures take him deep in time to an ancient Phoenician port perched on a Sardinian promontory facing Carthage.

His Own History

Jacopo Bonetto got his start at Tito Livio High School in Padua, studying history as well as Latin, Greek, and Italian literature from 1981-1986. He graduated from the University of Padua in 1992 with a Classical Archaeology degree and wrote a dissertation about using computer-aided design to reconstruct the urban development of the small Roman-medieval city of Acelum (now named Asolo). He then earned his PhD in Ancient Topography from the University of Bologna in 1997.

In 1998, Bonetto took a job as a researcher at the University of Padua. As he and his team excavated ancient Greek and Roman buildings, he documented their findings through CAD drawings. In 2002, he was promoted to Associate Professor of Greek and Roman Archaeology at
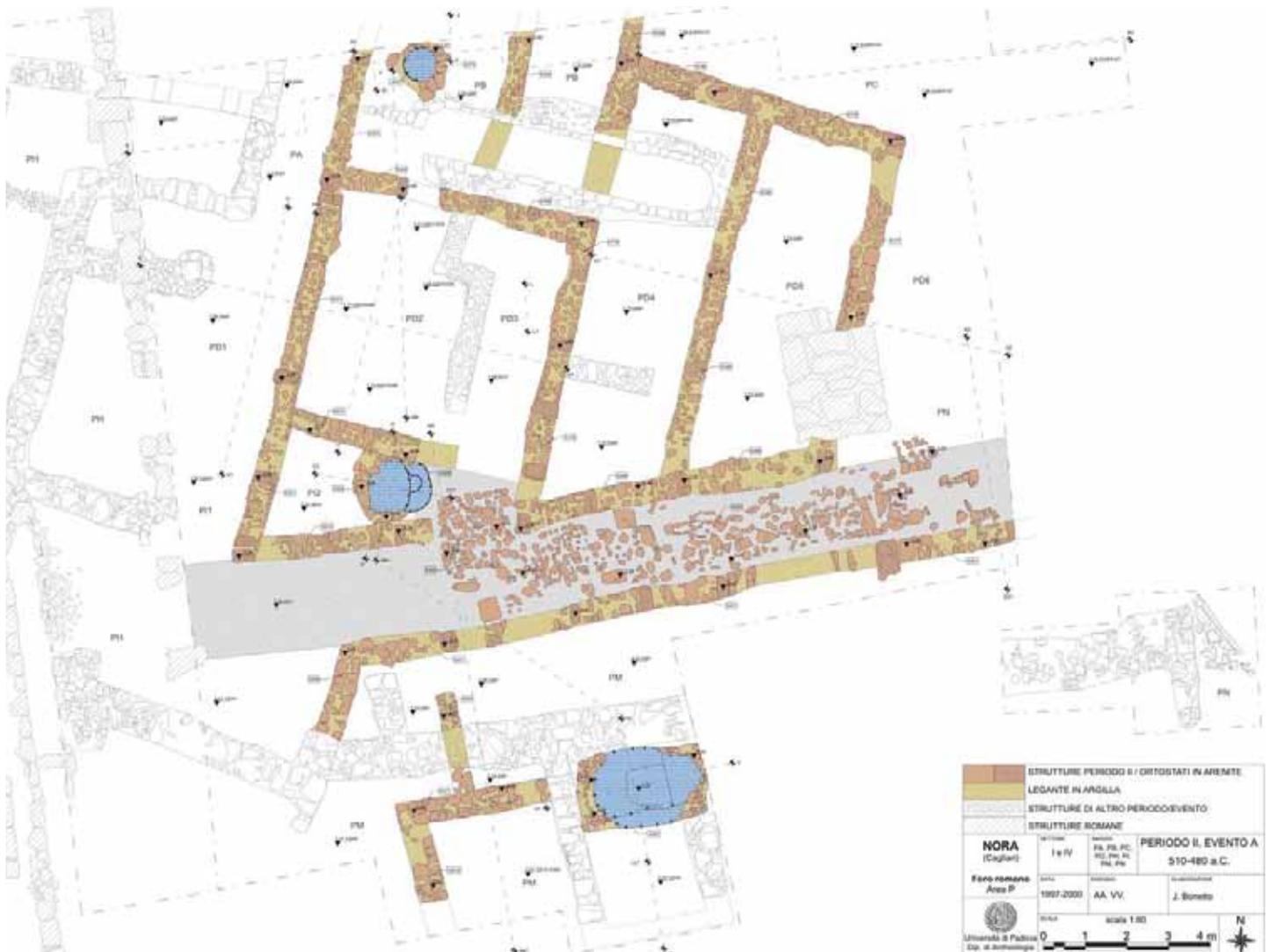
the university. The University of Padua is the third largest academic institution in Italy, with 60,000 students and 4,000 professors. Founded in the thirteenth century, the university has a long, rich history. It is one of the oldest operating universities in existence and has received international recognition for the quality of its education and the many remarkable people that have studied in its classrooms—among them the famous Galileo Galilei.

As part of his work for the university, Bonetto coordinates excavations of ancient sites in Italy (Aquileia, Nora), Greece (Gortyna in Crete), and Austria (Virunum). He and a number of scholars under his leadership have published five scientific volumes examining the excavation of Nora and retracing its history from the Nuragic period to late antiquity. He has also written several articles detailing Greek and Roman urban organization. Bonetto says that his work has been influenced over the years by the many German and English archeologists working in Greece. He also explains that he has been particularly impressed by the work at the Italian Archaeological School in Athens.

Finding Nora

Jutting into the Mediterranean Sea with a commanding view towards Carthage, Nora was a significant Phoenician trading port from the eighth to the sixth century B.C. It became a Punic city and later a busy commercial Roman town. Now, it's part of Sardinia. After a period of decline, Nora all but disappeared by the eighth century A.D. In fact, a portion of the ancient town even lies submerged below the Mediterranean, and the rest is dotted with ruins.

Bonetto and his team work for the Ministry of Culture (Soprintendenza per i Beni Archeologici di Cagliari) and the local municipality (Comune di Pula), collaborating with the University of Milan, the University of Viterbo, and the University of Genoa. They started excavating the Nora Archaeological Site in 1997 and concluded the excavation of the Roman forum in 2007. In 2008, they began the next phase—to conduct a complete excavation of the sacred area that includes a Roman temple—and to manage the corresponding reconstruction

The final plan of the main excavation conducted by the University of Padua in Nora between 1997 and 2007 which includes the Punic storage buildings constructed after Carthage conquered Sardinia and transformed Nora in an agricultural colony.

Global plan of the peninsula of Nora (near Cagliari, Sardinia) with the remains of Phoenician, Punic and Roman buildings discovered during the 20th century.

and restoration of the structures for public visits. The team's second objective was to teach the students the methodologies of archaeological excavations and documentation using modern technologies. As a result, some young students, such as Arturo Zara, Simone Berto, Giovanna Falezza, and Caterina Previato developed into very fine archaeological designers using Vectorworks® software.

Bonetto has encountered two challenges throughout his work in Nora. Faced with the pervasive hurdle of conducting an archaeological dig with a limited budget, he relies heavily on his unpaid students to help complete the work. Additionally, the Vectorworks Student Edition program has allowed his team to access superior professional software. "I was grateful for professional software that could help scientific research and educational programs to continue, despite the difficult challenges," says Bonetto. He loves to teach the students professional skills, and especially enjoys sharing with them the pairing of historical sciences and new technologies.

Together, they face another challenge—the lack of historical context available for this site. Trying to excavate and reconstruct the Roman temple without comprehensive background information has proven difficult. However, with design software, Bonetto and his students have been able to answer many of the questions regarding the use of the holy ancient building. They rely on 2D drawings to reconstruct these vanished worlds. The team is also beginning to use the Vectorworks program to make a 3D reconstruction of the ancient building of Nora.

Bonetto has been a Vectorworks Architect user for over 15 years. "Vectorworks is an essential tool for our work. It allows students to learn the architectural and artifact drawing practice in an easy and fast manner. Using Vectorworks means that we save a lot of time because it's so easy to learn, especially for students who may not be as familiar with the CAD world. Vectorworks also supports us in each phase of drawing practice—from field drawing to presentation," says Bonetto. He plans to also use the Vectorworks Landmark software to map the city and surrounding landscape of Nora.

Jacopo Bonetto, Denis Francisci, Anna Bertelli, Valentina De Marco and Erika Franceschi on the Apollo Altar of Gortyna, Crete.

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–Jacopo Bonetto, Associate Professor of Greek and Roman Archaeology, University of Padua, Italy

So far, they have uncovered a significant part of the Punic town and a Roman forum. They have also begun excavating the Roman temple, which housed religious events starting in the third century B.C. and is located near a Roman theater. Bonetto was thrilled when the team found 18 silver coins that had been imported from the Italian mainland and offered to deities at this religious site. Through their reconstruction, they also discovered that the citizens constructed a bigger temple in the first century A.D. They surmised that the temple had a remarkable colored mosaic floor crafted by an Italian artisan. They reconstructed the entire mosaic using zenithal photos and Vectorworks software by drawing each single piece of the mosaic floor and then duplicating the elements to reproduce the entire outline. Now, Bonetto's team is using the Vectorworks application to plan the restoration of the temple and to prepare marketing materials to draw tourists to the site. They hope to complete the excavation and restoration by 2013.

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Ludovica Savio and Eleonora Dai Prà (students of Padua University) working on the ancient floor of the Roman Temple of Nora.

Using computer-aided design tools to rebuild ancient societies, Bonetto continues to keep history very much alive. By sharing his passions for historical discoveries and new technology with his students—as well as the world—he is influencing a new generation to do the same.
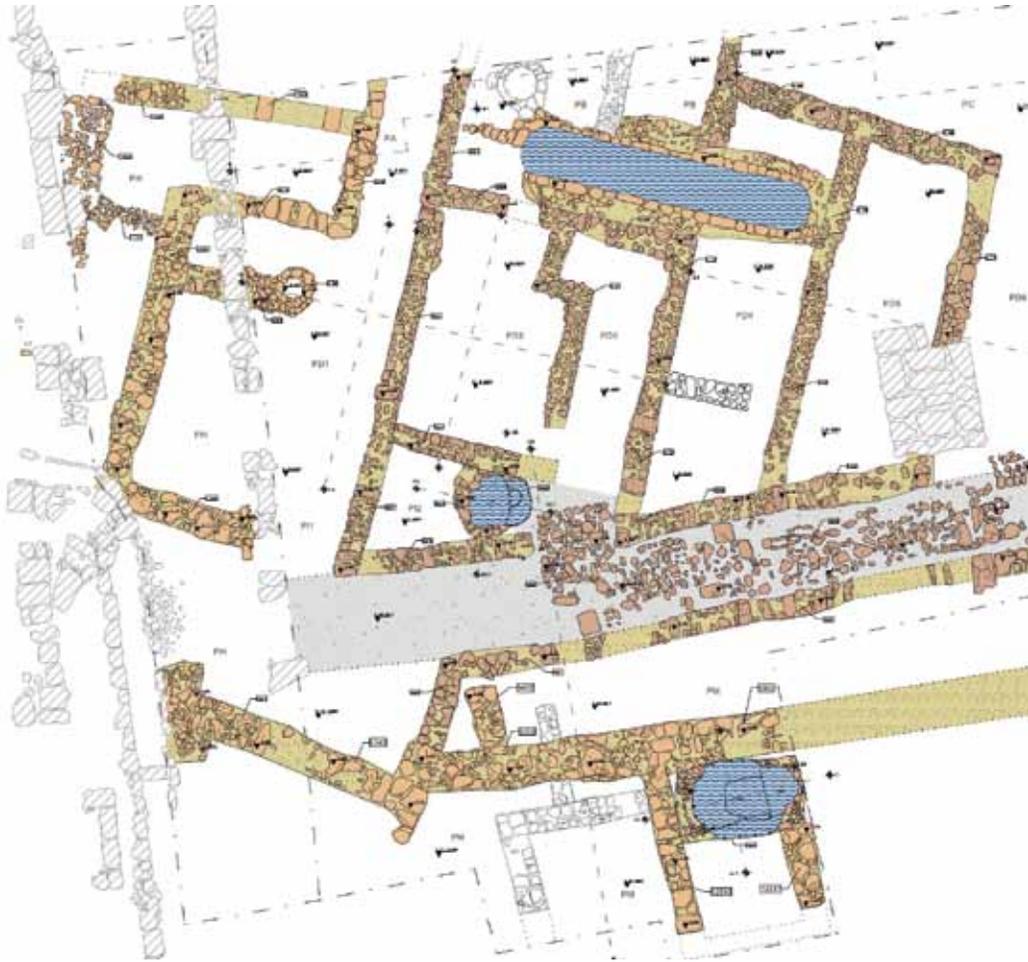
Final plan of the Roman republican buildings constructed over the Punic storage buildings.
Excavation conducted from 1997 to 2006 under the Roman forum of Nora.

Acknowledgements