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—John Wallrodt  
Senior Research Associate  
Pompeii Archaeological Research  
Project  
University of Cincinnati

# Digging up answers.

The AutoCAD WS web and mobile app helps shed light on ordinary Romans in the ancient world.



## Project Summary

When Mount Vesuvius erupted in A.D. 79, it buried the ancient city of Pompeii in ash, pumice, rock magma, and volcanic mud—freezing the town in time. For hundreds of years, archaeologists have mined the ruins for insights into the Roman Empire, studying prominent buildings and structures including temples, the amphitheater, and atrium houses owned by Pompeii's elite. Now, the University of Cincinnati's Pompeii Archaeological Research Project: Porta Stabia, directed by Professor Steven Ellis, is exploring the part ordinary Romans played in shaping the ancient city. "We deliberately chose to study one of the few city blocks without a fancy atrium house so we could learn more about workaday Romans," says Eric Poehler, the University of Massachusetts at Amherst professor who manages the project's architectural studies. "What was it like for them to live in ancient Rome? How did that experience change over the centuries?"

To answer such questions, the project team employs the full range of archaeological inquiry—excavations, structural and artifactual analyses, and geophysical surveys—on a working-class area of Pompeii that once sat in the shadow of the theater district. During the dig season, trench supervisors detail the excavation via hand drawings, which are eventually redrawn in AutoCAD® software by CAD experts. To share and study the resulting CAD data, project stakeholders rely on AutoCAD® WS, a free\* web and mobile application for AutoCAD software

that lets users view, edit, and share DWG™ drawings through a web browser or mobile device. With help from the AutoCAD WS application, Pompeii Archaeological Research Project teams are able to:

- Visualize and imagine the ancient world in 3D
- Easily access and view AutoCAD files to gain new insights and substantiate theories
- Write articles for publication faster than before

## The Challenge

On an archaeological dig, each day is rife with possibilities for discovery. And to chronicle each moment, one of the team members measures and draws to scale what he or she sees on grid paper, aiming for centimeter-level accuracy. A typical day may yield one or two such drawings, which are then assembled into a master AutoCAD drawing. While the CAD drawing represents what actually exists at any given time throughout the trench, team members may want to isolate a feature—such as a repagulum for holding a door-blocking beam—in a layer by itself, so they can imagine reconstructions of surrounding features such as walls. That's when things get difficult. "You can quickly end up with a deluge of files in various stages of completion," says John Wallrodt, senior research associate on the project. "It makes sharing and collaboration difficult."

# The AutoCAD WS web and mobile app makes it easier to explore and substantiate theories on ancient life.

Complicating matters, team members are graduate students and professors in the classics, not CAD experts. In the past, they'd usually open DWG files in graphic design software, but files viewed in this way lacked spatial components. "They couldn't use a ruler or check the area, which basically means they couldn't use the files for research," says Wallrodt. "We needed a way to give everyone on the project the ability to view and manipulate the project's CAD files."

## The Solution

With the AutoCAD WS web and mobile app, students, researchers, and other stakeholders can work with AutoCAD files without learning to use AutoCAD software. "For decades, the inability to read AutoCAD files has been a huge problem in archaeology," says Wallrodt. "The AutoCAD WS web and mobile app has completely democratized how we get our CAD data into the hands of project stakeholders. Even if someone isn't familiar with AutoCAD software, I can teach them to use AutoCAD WS in 10 minutes."

At any time, from almost anywhere, any team member can log into an AutoCAD WS account and view all the project's AutoCAD files. "There's often important information in the AutoCAD file, including how walls meet and whether they were constructed at the same time," says Wallrodt. "AutoCAD WS has completely opened up the students' eyes to the rich information a DWG file can hold."

## Visualizing Ancient Life

Throughout the digging season, project team members form theories on what their findings reveal about ancient Romans in Pompeii—and the AutoCAD data gives them the information and metrics they need to substantiate those theories in articles. "Using the AutoCAD WS app, team members will look for features and spatial arrangements within a room to determine things

like similarities in orientation, wall thickness, and devastation patterns," explains Poehler. "At the end of the digging season, these types of measurements are useful. Students can tie things together based on metrics they quickly glean from the AutoCAD files."

Wallrodt adds, "The interface on the web version of AutoCAD WS makes it easy for students to very intuitively move through files and check measurements, which they couldn't do with an AutoCAD file opened in graphic design software."

Poehler and Wallrodt agree that interacting more intimately with the AutoCAD data via AutoCAD WS can actually help students "see" things they might not have otherwise. "We can excavate only a few rooms at a time, so we excavate, record, then fill all the dirt back in," says Wallrodt. "With AutoCAD WS, you can always view and rotate buried walls that you can no longer physically see—even years later."

"The challenge is to imagine parts of the earth and walls there and not there," adds Poehler. "With the AutoCAD WS app, our team can hide layers—say a wall—and visualize what might have been there at different points in time."

## Results

The AutoCAD data the Pompeii Archaeological Research Project: Porta Stabia viewed with the AutoCAD WS web and mobile app has already helped the team to uncover insights into the lives of everyday Romans. For example, the AutoCAD data shows how vats used to manufacture ancient fish sauce and tan hides showed up in the same period. Then, in the first century, things started to shift. "Drains moved, walls shifted, and doors closed," says Wallrodt. "It's all very well documented in the DWG files. People began to shut down their stinky manufacturing operations and turned their houses and workshops into restaurants."



Poehler adds, "It represents a real shift in the way people made money. Instead of engaging in craft-level industry, they're capturing money from people walking to the theater district. It says something very interesting about the economy of the city in that period."

Turning such insights into papers for academic journals requires a lot of research and documentation. And with the AutoCAD WS web and mobile app, that process is now much easier and faster. Wallrodt explains, "A single sentence a student writes often needs proof, and they can't go on without it. In the past, students had to contact the CAD manager to get the information, which could take up to a week and put their writing on hold. AutoCAD WS gives students direct, immediate access to the information they need. As a result, they all wrote their documents faster this season."

## Learn More

To find out how the AutoCAD WS web and mobile app can help you view, edit, and share AutoCAD drawings, visit [www.autodesk.com/autocadws](http://www.autodesk.com/autocadws).



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—Eric Poehler  
Professor  
Pompeii Archaeological Research Project  
University of Massachusetts at Amherst



888.662.7238  
[ideateinc.com](http://ideateinc.com)  
[sales@ideateinc.com](mailto:sales@ideateinc.com)