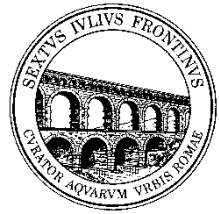


# Frontinus-Gesellschaft e.V.

Internationale Gesellschaft für die Geschichte  
der Wasser-, Energie- und Rohrleitungstechnik



**Cordial Invitation  
to the Online Lecture (ZOOM) on 10.04.2025, 6:00 pm (CET)**

**Dr. Gemma JANSEN, NL**  
**Lead Hot Water Boilers and Cold Water Tanks – How to Bring Warm Water to a Roman Bath**  
**(Lecture in English)**

Gemma Jansen is an archaeologist and independent scholar specialized in Roman water and drainage systems. She wrote her dissertation at Nijmegen University (The Netherlands) on the inner urban water systems of Pompeii, Herculaneum and Ostia.

Ever since she discovered that Roman toilets have received little scientific attention, she has devoted much energy to write on toilets and to promote toilet research. Last October she published the first comprehensive book on the toilets of the Roman capital 'Sixty-Six Toilets and Urinals in the Ancient City of Rome', together with her colleagues from Rome.

Lately, she's been focusing on the relationship between people and Roman water technology, including aqueducts builders, and slaves operating rainwater systems in the houses.

At the moment she is studying the stokers of Roman baths and aims to reconstruct how they managed to get warm water in the baths - a research investigating both water technology and human intervention.

Gemma Jansen about her lecture

*The water heating system forms the very core of a Roman bathhouse. Water was heated in the praefurnium, the stoker's room, by means of a system of lead water basins, lead boilers, lead waterpipes and bronze valves. While those are all essential pieces of equipment in a bath, they are a rare find: once bathhouses ran out of use, these valuable metals were recycled fanatically.*

*Apart from the hot water installation at the villa in Boscoreale, near Pompeii, no other installations have been excavated intact. So far, bits and pieces of only ten boilers, of four round basins that help boilers to warm up more quickly, and of 11 lead distribution basins have been recovered. By using the Boscoreale find as a blueprint, we can see where all the recovered fragments belong: from a distribution basin a pipe leads cold water to one or more boilers heated by a fire. The heated water is mixed with cold water, and guided to the hot bath on the other side of the praefurnium wall. The stoker was able to operate this hot water installation using taps. A first analysis of this system was made by the German scholar Hubertus Manderscheid; more recently Thomas Heide discussed these systems in his dissertation.*

*As Romans had no equipment to measure water amounts, nor its temperature, one starts wondering how this system was operated and supervised by the stoker. In this contribution I want to show what happens when water begins flowing through the pipes and a fire starts heating the water. That is where the stoker would have been confronted with various problems: let's take a look at how he mastered them.*

The access data for the online meeting (ZOOM) are as follows:

<https://us02web.zoom.us/j/87933930044?pwd=dIk4REZ4S0NnL3k2RGN2TVdtZTd3Zz09>

Meeting-ID: 879 3393 0044, Kenncode: 631844

Prof. Dr.-Ing. Hans Mehlhorn  
President of the Frontinus Society

Dipl.-Ing. Gilbert Wiplinger  
Head of the Scientific Board of the  
Frontinus Society