



Founded in 2021, **EXTRAQT** is an engineering firm with the ambition to boost our society towards sustainable heating and cooling through aquathermal energy. The company develops energy models (also known as ‘digital twins’) of rivers, lakes, and canals to estimate the potential of these sustainable heat and cold sources. Through this engineering, EXTRAQT draws a tailor-made technical design and install optimal aquathermal systems.

To learn more, we spoke with **Jan Denayer, co-founder of EXTRAQT.**

**Among the services you offer, which do you think are most relevant for owners of historic houses?**

We provide services ranging from feasibility studies to full installations, but for heritage property owners, our closed aquathermal systems are especially valuable. This solution combines sustainability with preservation: state-of-the-art technology is integrated invisibly into historic buildings. Owners benefit from improved energy efficiency and comfort while maintaining architectural character, ensuring their property meets modern performance standards without compromising its heritage.

**Why do you think it is particularly important for owners to implement aquathermal energy solutions in historic properties?**

Aquathermal systems use heat-pump technology to turn water’s stored energy into usable heating and cooling. Unlike deep ground drilling or noisy air fans, aquathermy needs no invasive boreholes and keeps equipment out of sight—ideal for protecting historic fabric. It’s low-maintenance, quiet, and delivers reliable year-round comfort. For buildings near surface water, aquathermy is a practical, less disruptive way to improve energy performance while preserving the building’s appearance, structure and value.

**What are the long-term advantages of integrating aquathermal energy solutions into heritage buildings?**

For heritage buildings by water, aquathermal systems offer a practical, low-impact heating and cooling solution. Investment and operational costs sit between geothermal and aerothermal, with comparable efficiency, making them cost-effective for this niche. They can cut CO<sub>2</sub> emissions by 66–99%, provide energy independence from price swings and geopolitical shocks, and use modern heat-pump technology with remote monitoring and control via the EXTRAQT-dashboard. These closed systems require little maintenance, preserve historic fabric, and have a lifespan of at least 25–30 years.

**Could you share a successful example of a historic house where EXTRAQT’s solutions have been implemented?**

We have multiple successful examples. One is the Castle De Merode, where we installed a closed aquathermal system that draws heat from the moat via about 100 m of piping directly to the castle’s heat pump. The system replaced the former gas boilers, cutting reliance on fossil fuel and lowering running costs. The owners had been exploring natural energy solutions and pushed ahead after the 2022 price spikes to keep the building habitable for visitors and to protect the fabric.

Visit the website: [www.extraqt.be](http://www.extraqt.be)