

CASE STUDY



Flexalen® for district heating and potable water from geothermal heat source



Eco-village Permatopia rolling out a sustainable future with Flexalen®

Flexalen®, the Cradle-to-Cradle Certified® solution and Flexalink connection for district heating and potable water transportation in the sustainable residential and agricultural community of Permatopia, in Denmark.

Karise Permatopia

[Permatopia](#) is a sustainable farming community in Karise, located approximately an hour south of Copenhagen. This innovative project was established in 2018 to create a tangible model for a more sustainable and communal way of life. With a strong commitment to environmental stewardship, Permatopia prioritizes using renewable energy sources, including **geothermal heat**, to power its infrastructure.

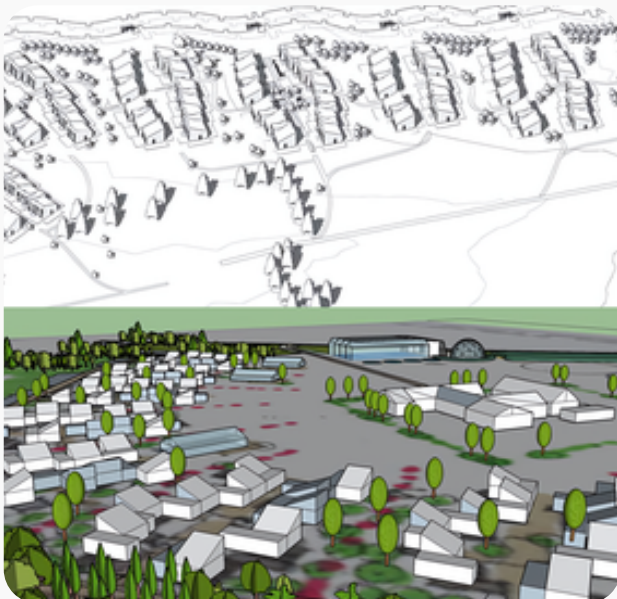
Project Goal

The primary goal of the Permatopia project is to create a **sustainable living** community that minimizes its environmental footprint while maximizing efficiency and comfort for residents. However, achieving this vision posed several challenges, including the efficient distribution of geothermal heat to the community's buildings and ensuring a faster installation process that aligns with sustainability principles.

Solutions

To address these challenges, Thermaflex's **Flexalen® pre-insulated pipes and Flexalink prefabricated connections** emerged as ideal solutions due to their resistance, sustainability, efficiency, and ease of installation.

Flexalen® pipes stand out as the best alternative due to their excellent chemical resistance and impressive track record in geothermal projects. And the tailored Flexalink connections, facilitated quick on-site assembly, minimizing installation time and labor costs.



Project Process

For the development of the Permatopia ecological village project, Thermaflex provided specialized knowledge and comprehensive support, managed by [Jan Hønning](#), Sales Manager of Thermaflex Nordic, in close collaboration with [John Jensen A/S VVS](#) as the installer, and with the administration of the Permatopia village project manager.

The supply of **heat and domestic hot water** to the residences was done through Flexalen® pre-insulated pipes and pre-fabricated Flexalink connections. This highly sustainable network solution offered efficiency and quick installation, making it ideal for the Permatopia project.

The use of Thermaflex's pre-insulated **Polybutene-1 pipes**, chosen for their sustainability and efficiency, ensured that no harmful materials were used in the piping network, aligning perfectly with Permatopia's environmental goals.

Significant reductions in installation time were achieved thanks to tailor-made, pre-fabricated Flexalink connections, facilitating on-site assembly quickly. Each Flexalink was identified with an ID number corresponding to the house, allowing for more efficient and faster installation. This lightweight system, made from Polybutene-1, required fewer welds and excavations on-site, minimizing disruptions to the community.

Flexalen® 600 has a strong focus on reducing environmental impact, being **Cradle to Cradle Certified®**. This ensured that no materials used were harmful to the environment, whilst also allowing the pipes to be excavated and recycled after use, a key consideration for the Permatopia project.



Results & Benefits

The implementation of Thermaflex Flexalen® pre-insulated pipes and Flexalink connections resulted in a sustainable network system with efficient distribution of geothermal heat and potable water, also contributing to reducing environmental impact. With these robust and easily applicable solutions, Thermaflex and John Jensen VVS demonstrate that we can collectively transition to sustainable energy while ensuring optimal levels of comfort and cost savings.

By prioritizing sustainability and efficiency, Permatopia sets a precedent for future sustainable living communities, demonstrating the viability of renewable energy solutions in achieving environmental and social objectives.

Contractor quotes

"It is important to be careful with the limited resources on our planet, and think of future generations."


"We don't only think in the present and care only for our own needs. We also care about the generations to come, who also have a right to a good life."


Resident of Permatopia

"It's flexible, easy, and the system is tailor-made and pre-assembled. It makes our job much easier and as a result we save a lot of time. This creates a better working environment for us with less back injuries and with the rapid installation, less time is required on site."

"For us this means a better work environment, less back injuries and faster installation work. That helps us a lot."

Installer from [John Jensen VVS](#)

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