hysopt

hydronic system optimisation

- SOFTWARE
- ACADEMY
- CONSULTANCY
- INDUSTRY

SOFTWARE

The Hysopt Software is a unique combination of an intuitive design environment, a powerful calculator tool and a simulation tool for designing and optimising major HVAC installations.

With the innovative 'Basic Circuit' design technique, pre-programmed hydronic circuits will be connected to each other to quickly create a functional installation. At an early stage, conceptual design flaws will be reported. With the advanced optimisation algorithms, every system component – for example, pipes, pumps, valves, radiators, etc. – will be automatically selected to give an optimal combination. By using dynamic simulation, system behaviour will be analysed and Key Performance Indicators (KPI), such as energy consumption, comfort and investment will be quantified. Various system alternatives will be compared in order to achieve the optimal solution.

Hysopt decisively opts for the 'Software as a Service' strategy. This means that the software is accessible via a web browser, making implementation of updates highly flexible and enables it to provide direct online support. For optimal ease of use, the optimisation algorithms and the simulations will be calculated on our high performance cloud servers.

- **Fast and intuitive design**
- **Optimisation by simulation**

ACADEMY

At the Hysopt Academy, participants will be trained to be competent Hysopt software users. They will work through practical examples of complex installations and analyse problematic installations. In addition to software training, Hysopt will also share its experiences and knowledge in workshops and seminars.

- **Training to HVAC expert**
- **From practice to practice**

CONSULTANCY

Hysopt Consultancy offers specialised knowledge about optimising the HVAC installations, for both new constructions and renovation projects. By means of the Hysopt Software your installation will be completely calculated, simulated and optimised.

Various system alternatives will be quantitatively evaluated using the Key Performance Indicators; energy consumption, comfort and investment. Because of the transparent reporting, the design will be fully adapted to the wishes of the principal and client.

- **Project Consultancy**
- **Certificatie**

INDUSTRY

The Hysopt Competence Center supports and guides manufacturers with R&D projects. Hysopt Software will be used as extremely fast and flexible test bench. Through Industry Marketing Cooperation, products can be implemented in the Hysopt Software and made available for all Hysopt users. Additionally, Hysopt develops manufacturer-specific applications and OEM products.

- **R&D**
- **Product implementation**

hysopt
hydronic system optimisation

Hysopt develops and commercializes unique software for HVAC designers and gives advice from the Hysopt Competence Center to engineering offices, installation companies, architects, builders and manufacturers. As a spin-off of the University of Antwerp, this technology has been grafted onto years of development and research.

Our mission is to optimize the performances of HVAC installations on a large scale by supporting the HVAC designers with extremely powerful and user-friendly design tools and services.

Performance through Transparency – providing insight in the design and the final system performances, leading the HVAC sector to quality and sustainability.

Contact our consultants.

Hysopt NV

Bredabaan 841
B-2170 Merksem
Antwerp, Belgium

T: +32 3 298 16 30
F: +32 3 298 16 39

sales@hysopt.com
www.hysopt.com

SOFTWARE

HEATING

COOLING

FUTURE DEVELOPMENT

WATER

VENTILATION

GASSES

DESIGNER

- Drag & drop interface with the Basic Circuit design technique with a multi-layer approach for heating and cooling
- Extensive design-model libraries for hydronic circuits: mixing, distribution, mixing injection, cascade, hybrid production…
- Distribution according to 2-pipe, 1-pipe and reverse return systems
- Reusing concepts and models via your own library
- 'Best Practices Library' with examples of various system concepts: variable flow, constant flow, hybrid production…
- Designs on circuit diagrams and floor plans
- Checking on design errors via the 'Configuration Check-up'
- Export of circuit diagrams, floor plans and bill of materials

CALCULATOR

- Calculate design flows rates using the capacity and ΔT
- Automatic pipe diameter selection (steel, copper, plastic)
- Automatic optimisation of pumps, valves and balancing valves
- Calculation of every possible hydraulic circuit and combinations
- Error checking on unrealistic parameter input
- Analysing actual valve authority versus the desired levels
- Analysing the hydraulic balance
- Cost price calculation according to material costs and installation costs
- Export: optimised bill of materials, hydraulic balancing report and pump selection files.

SIMULATOR

- Implementation of control strategies and control technology
- Dynamic simulation and analysis of pressure, flow rate, temperature, capacity, control signals…
- Analysing control loops: stability, velocity, accuracy, interactivity, short cycling behaviour, etc.
- Quantifying the KPIs: thermic comfort, energy consumption of generators and pumps and pipe heat losses
- Average seasonal efficiency (full and part load): system efficiency, production efficiency, distribution efficiency