polysun®

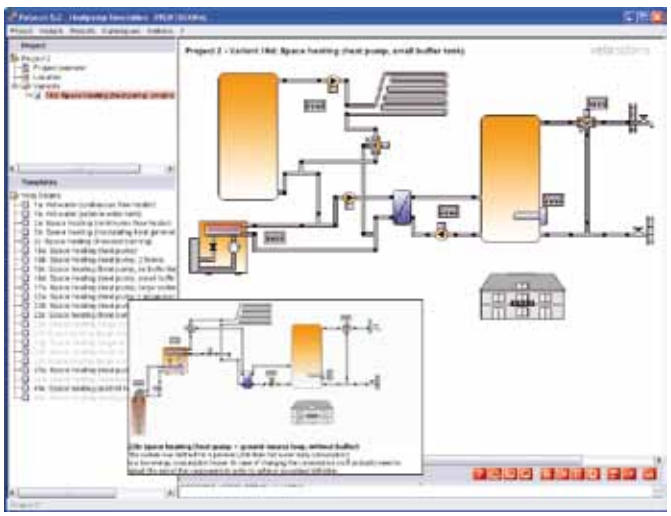
HEATPUMP
SIMULATION

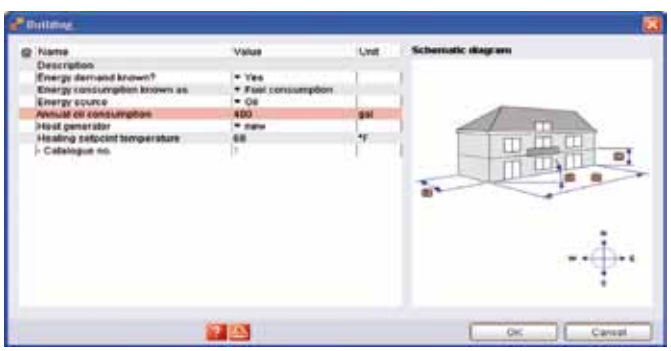
Design and enhance your system with Polysun, the innovative simulation software for heat pump systems

vela solaris

State-of-the-art simulation

Thanks to its easy-to-use definition as well as yield and economic viability calculation features, Polysun provides users with unequalled flexibility in the design of top quality heat pump systems.
Polysun provides you with invaluable help in planning, designing and defining your system to the highest standards. Polysun enables you to figure out yields and energy savings and get an accurate cost analysis in a matter of minutes. All results are summarized in clear and detailed PDF-reports.





Polysun: designing your ideal system in four easy steps

Step 1: Defining your hydronic scheme

– Polysun provides users with the world's largest and most comprehensive template selection. Polysun offers countless ready-made templates for the following systems:
  • Domestic hot water
  • Space heating
  • Ground-source and ground-water loops
  • Expandable with compression cooling machines
– Design yourself your personal hydronic template.
– Have a template designed by your Polysun team.

Step 2: Defining your consumers

– Enter daily hot water consumption or yearly demand
– Select your building features from the catalogue or define your heating energy demand
– Freely configure your consumption values, e.g with a load profile

Step 3: Dimensioning your system

– Polysun provides you with a comprehensive database of commercially available products. Our database is constantly updated and promptly made available to all users.
  • Heat pumps, ground-source loops, tanks, conventional heat generators, pumps, heat exchangers, etc.
  • Catalogue integration with own product range available.
– Dimension and modify system components such as borehole depth or soil composition.

Step 4: Result evaluation

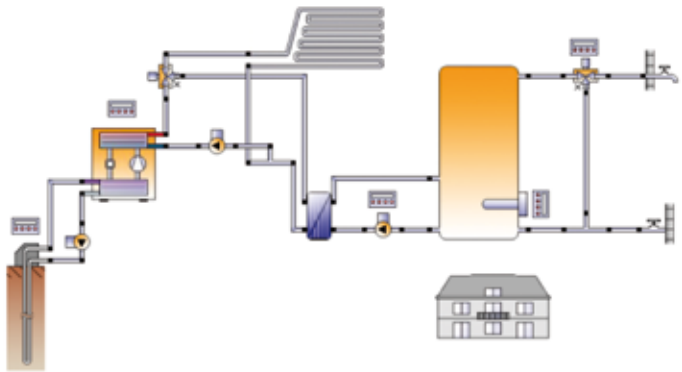
– Automatic display of simulation results
  • Clear and detailed evaluations with PDF-reports instill confidence and trust in customers and support any subsidy applications.
  • Displaying economic results (such as payback period, incentives, energy balance) is proof of your professionalism
  • Monthly and hourly results for all components make it possible to monitor energy flows.
  • All results can be graphically displayed.

PDF-report

Professional report

your logo

2 — 22b: Space heating (heat pump + ground-source loop, without buffer)



Name of the company	Location
Example	USA
simon geisshuesler	NY Albany
Stadthausstrasse 115	Longitude: -73.8°
8640 winterthur	Latitude: 42.75°
001 (697) 346 23 46	Elevation: 200 ft

Overview

End energy to the system (fuel and electricity)	11473.4 kBtu
Energy consumption (Quse)	34115.4 kBtu
Syst. efficiency (End energy / Energy consumption)	2.97
Comfort demand	Energy demand covered

Overview heat pump

Seasonal performance factor	3.8
Ground loop length (Total)	393.7 ft
Energy withdrawal	26784.2 kBtu

Meteorological data

Outdoor temperature	48.8 °F
Global irradiance	435.6 kBtu/ft²
Diffuse irradiance	199.9 kBtu/ft²

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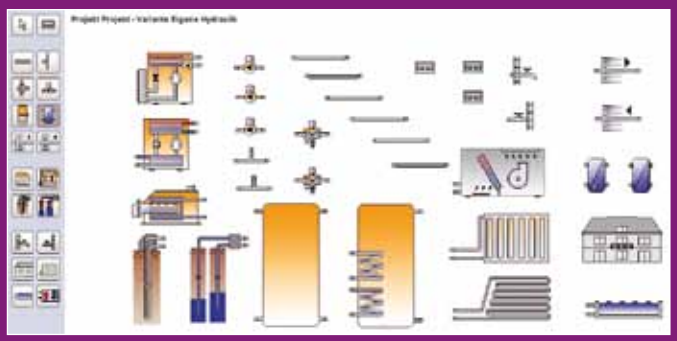
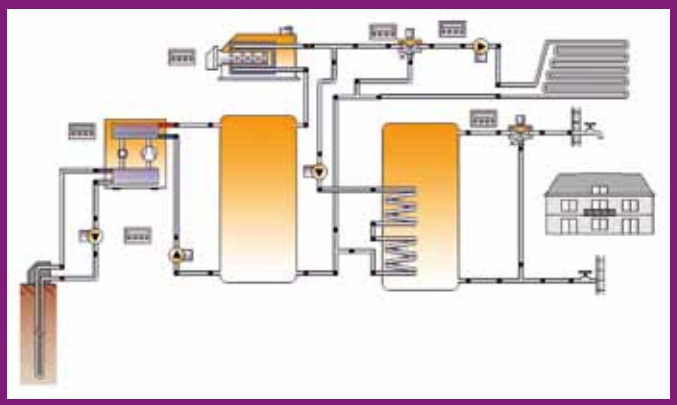
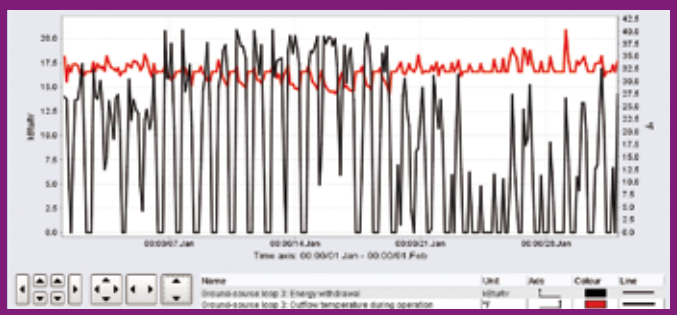
Your advantages with Polysun

– Time-saving design
– PDF-reports satisfy customers
– Clear yield forecasts
– Successful incentive applications







Enjoy modularity and maximum flexibility with Polysun Designer

Polysun's modularity and flexibility enable you to design and modify your system in the blinking of an eye. Our software enables hydronic systems to be combined and simulated in any thinkable way. This will prove particularly helpful when it comes to complex systems.
Polysun is also an ideal solution for new buildings, redevelopment activities and large systems.

Polysun guarantees an accurate and transparent simulation
Polysun has been on the market since 1992. Originally created at the Institut für Solartechnik SPF (Institute for solar technology), part of the Hochschule für Technik (Technical University) in Rapperswil (Switzerland) our software has been since continuously setting new and higher industry standards. Solid scientific foundations and its user-friendliness have made Polysun the preferred software solution for thousands of experts and well-established companies worldwide. Vela Solaris closely cooperates with universities and manufacturers to push Polysun's development further everyday.

Polysun Heatpump Simulation is available in three different user levels
Tailored solutions for all users to best meet everyone's needs.

Polysun Light
Intuitive operation with wizards and hydronic templates; quick and reliable

Polysun Professional
Super-easy to use; enter own components; high-quality sales support with a wide-range of result displays and countless templates

Polysun Designer
Leading, market-oriented software providing maximum flexibility in the design of large and complex systems; modularity in the creation of hydronics; modular system assembly

Combination of products from the Polysun range
Upgrade your version of Polysun adding the following comprehensive modules:

– Solar thermal energy – Polysun Solarthermal Simulation
– Photovoltaics – Polysun Photovoltaic Simulation
– Cooling – Polysun Cooling Simulation

Demo version
A free-of-charge demo version is available on www.polysunsoftware.com/demo

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