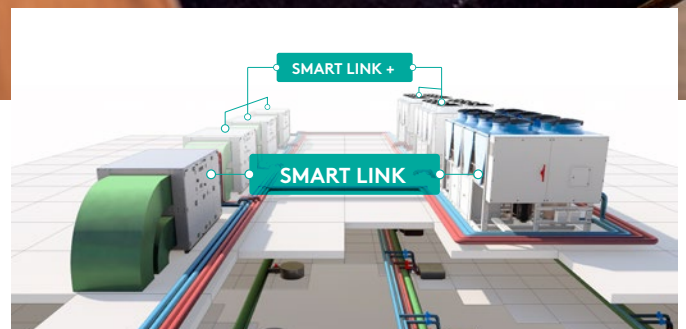




From independent products to a smartly linked system.

### **SMART LINK+**

- Improve indoor comfort and energy efficiency





# From start to finish - and onwards

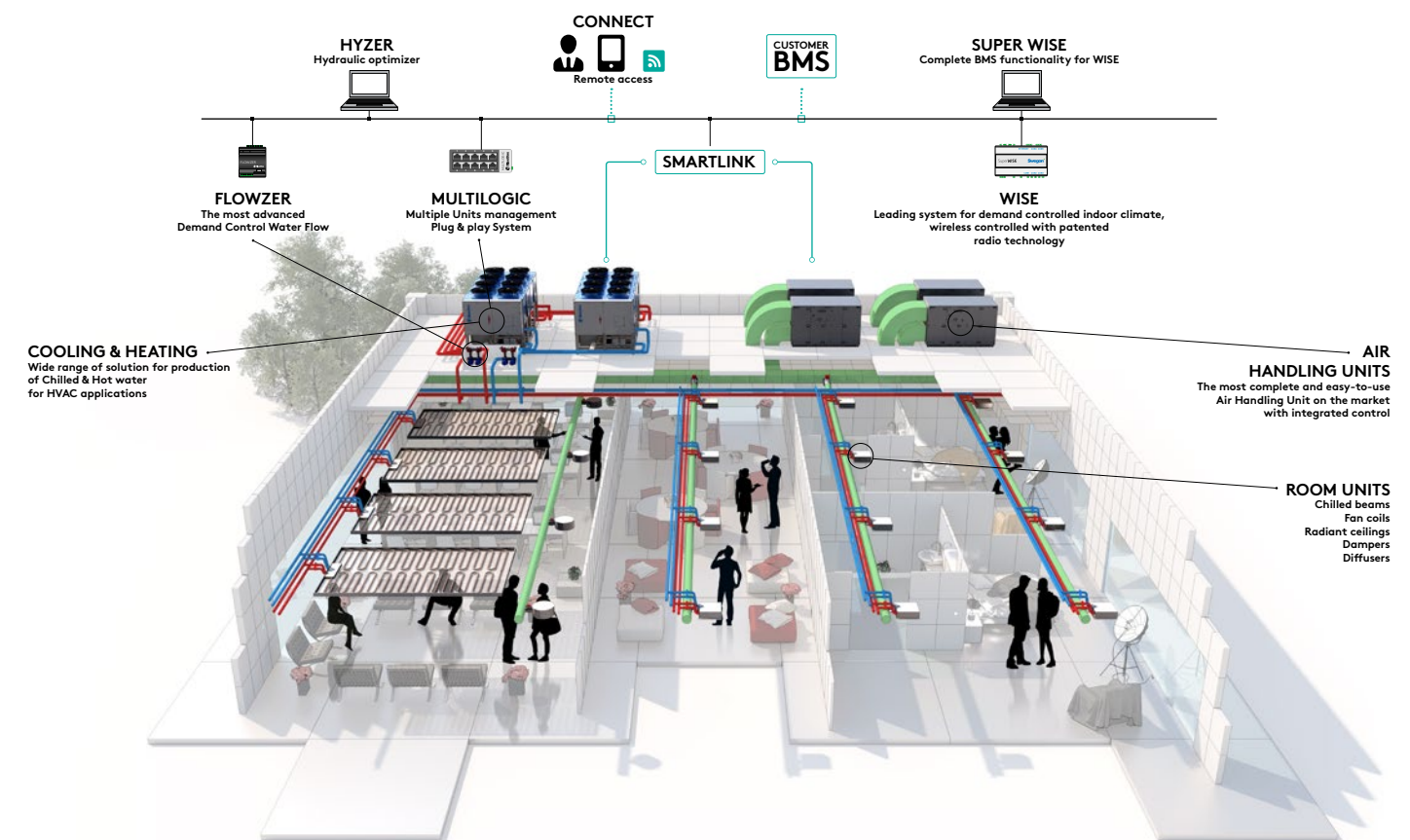
People spend most of their time indoors, which is why we need a sound indoor climate for our health, well-being, and happiness. Swegon is there for you at every stage of your property project to achieve the world's best indoor environment with the least possible impact on the external environment.

Our business models, services, products, and systems are all designed to provide you with the right solution for each individual project. With years of experience, we have a unique knowledge of the entire construction process. To be able to choose the right system solution over time.....



# From independent products to a smartly linked system

Swegon delivers the best indoor climate. Swegon's Chillers/Heat Pumps / Multifunctional units together with AHU:s in the GOLD series fulfills the needs for cooling and heating in the most effective way. SMART Link+ transforms these 2 excellences into a unique optimized system in our strive to deliver the best indoor climate with minimum energy consumption.





# SMART Link+

Linking the indoor climate requirements to an optimised water production and distribution has never been easier

## SMART Link+ saves energy

**3% Energy saving** for every degree the cooling flow water temperature is raised.

**2.5% Energy saving** for every degree heating flow water temperature is lowered.

Chillers and heatpumps are usually dimensioned using standard water temperatures to cope with warmest and coldest days. SMART Link+ saves energy by modulating the water temperature to suit the load so that the compressor runs more efficiently.

SMART Link+ ensures that the temperature difference is as small as possible between demanded and supplied temperature, which minimises the energy required to heat or cool.



## What's in it for me.....

### Time and cost savings

- Economic operations, straight forward installation and user-friendliness are factors that are of great significance for property owners and installers.
- As the SMART Link+ is an embedded standard option on Swegon control platforms SMART Link reduces on-site installation time and costs as all that's needed is to connect all units to a network.



### User friendly web-interface

- All SMART Link+ functions for cooling/heating units and access for external BMS for integration are available through the air handling units' controllers.



### A complete energy management system

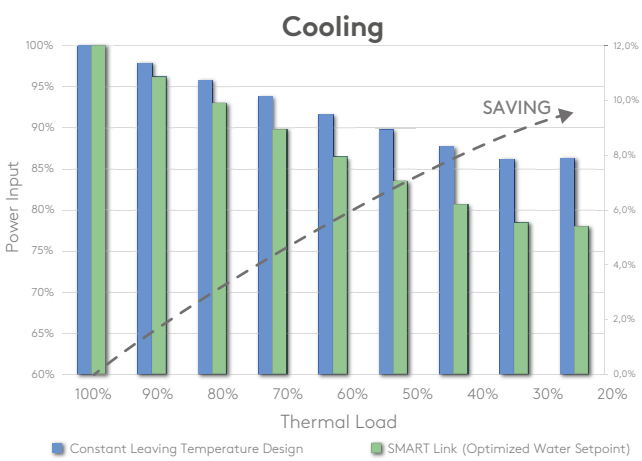
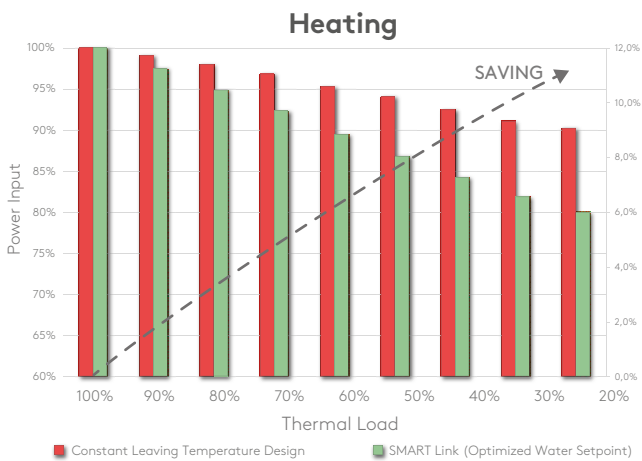
- Several hydronic loops can be controlled and optimised from each air handling unit. E.g. loops for heating and cooling for central heating, chilled beams or fan coils.
- SMART Link+ also handles external heating and cooling system e.g. district heating and geothermal cooling.



# SMART Link+

## Energy analysis

10-15% of annual yearly energy saving by optimizing the output temperature to the actual thermal loads.





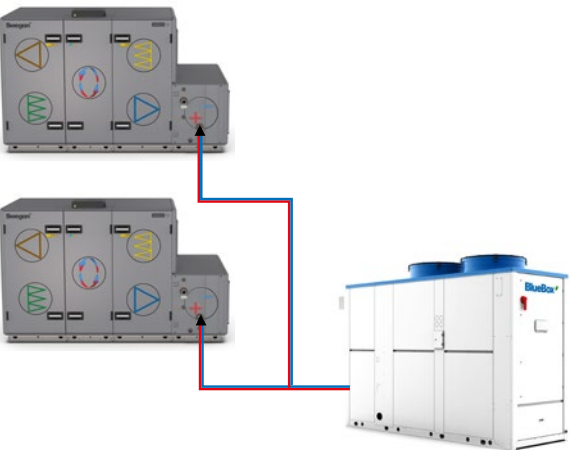
# SMART Link+

## Many possibilities for overall solutions

It is possible to use up to 2 producers for heating production and up to 2 producers for cooling production (together with the MultiLogic function several producers can be used) and for GOLD units we can use up to 10 pieces. Cooling and heating producers can be separate water chillers or heat pumps, reversible heat pumps or multifunction units.

Communication between the GOLD air handling unit and the different cooling and heating producers takes place via Modbus TCP/IP and the system integration is already done, which means that no extra controls are needed. The supply of energy is controlled by a valve that opens and closes depending on the capacity requirement.

**Example 1.** Reversible heat pump produces heating and cooling to 2 GOLD air handling units.



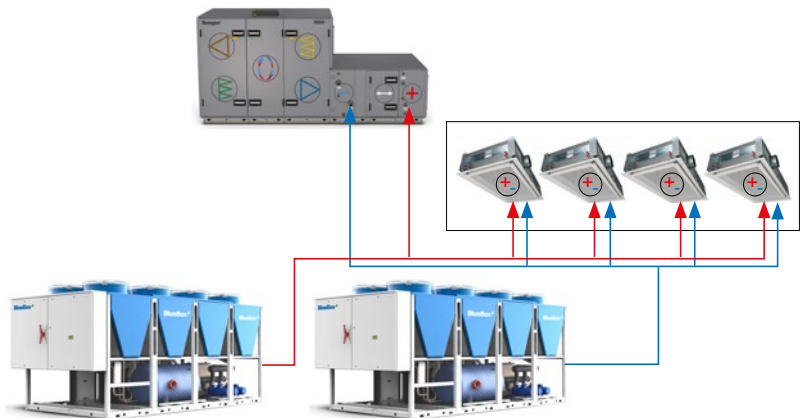
By attempting to keep as many valves in the system as open as possible, the liquid temperature for cooling and heating can be controlled according to current needs.

A significant energy saving can be made by controlling the cooling medium to as high temperature as possible and the heating medium to as low temperature as possible.

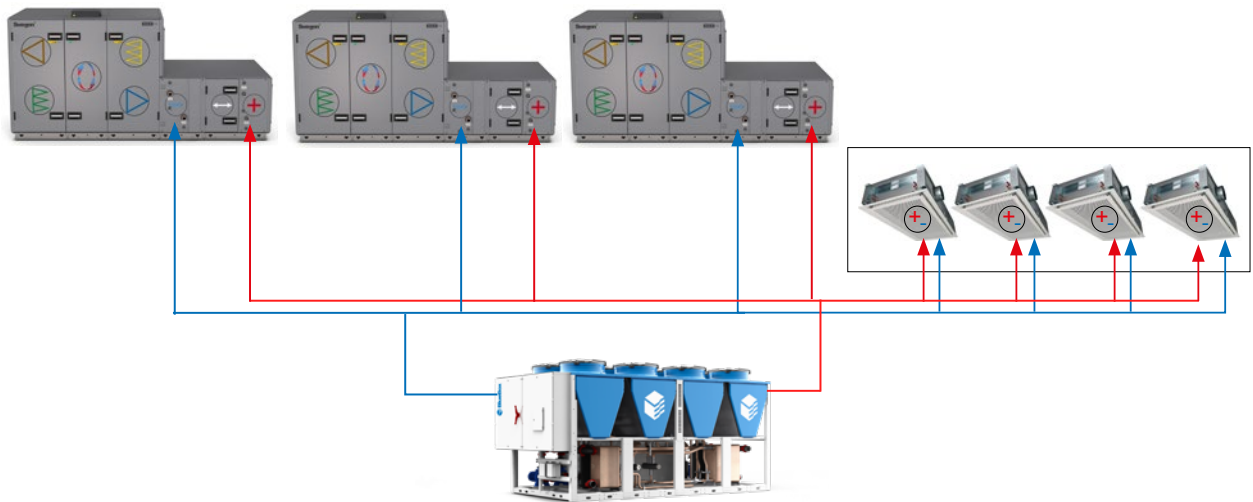
The SMART Link+ system is very flexible as several GOLD units with different types of cooling and heating sequences can be connected to the same or multiple cooling and/or heating producer. Below illustration of only a few examples

**Example 2.** Air cooled chiller and heat pump that produces cooling and heating to a climate beam system and heats the primary air from GOLD.

Separate air cooled chiller for cooling and dehumidifying the primary air from GOLD.



**Example 3.** Multi functional unit with simultaneous heating and cooling production together with 3 GOLD air handling units. Beam system for heating and cooling.



# SMART Link+

## The hydronic system, the smart way for heating and cooling with a renewable source

SMART Link+ ensure that the system works with the optimized water temperature (the one exactly needed to satisfy the internal requirements with the highest energy savings).

This is the first piece of the whole picture. In fact, also how much water shall move from producers to consumers is a key point, specifically for systems dedicated to comfort applications where the loads vary all year long.

The traditional system with fixed speed pump is typically inefficient for three reasons mainly: Water pumps are usually oversized to cover uncertainties of system pressure drops. Introduction of water flow valves are intrinsically a waste of energy.

Return Water Temperature different than design and so inefficient heat exchange at the evaporator (Low DT Syndrome).

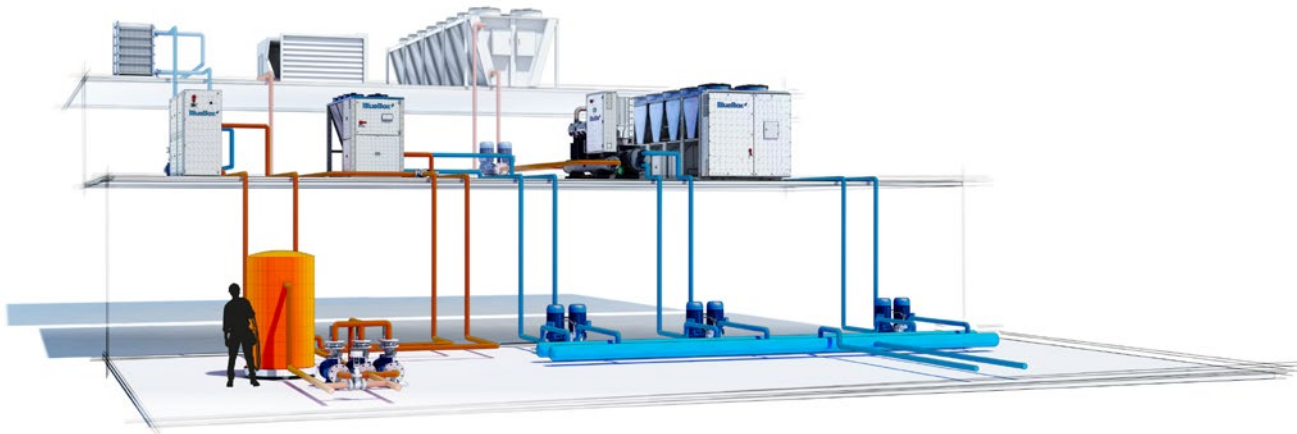
Flowzer is a smart logic of managing variable flow inverter pumps that ensures an overall increase of system energy efficiency. Swegon offers different FLOWZER solutions to perfectly suit every project requirements. The use of Flowzer compared to a fix speed pumps allows Pumps energy saving up to 55% and total system energy saving up to 15%.

## And beyond....

Moving towards more challenging applications where more units are present, different kind of producers with different efficiencies, etc...

Hyzer is Swegon proprietary Plant Management intelligent system for optimizing plants with multi chillers/Heat pumps working with variable flow. Hyzer offers flexible and scalable solutions to fulfill different customers' requirements. Ensuring the maximum comfort and implementing different optimization logics in order to increase the system efficiency, this is our System approach!

Therefore starting from the room going to the roof Swegon can offer a complete set of solutions to address any kind of application from the smallest to the biggest ensuring the best indoor climate with the highest efficiency.





# Get the most of your SMART Link+

## GOLD

### A firm foundation – the original forefronting development

A GOLD unit is required not only to provide the ultimate in comfort with maximum energy efficiency, it also has to be easy to plan, install and commission.

This new version of SMART Link connects Swegon chillers and heat-pumps with GOLD units and optimises the production of cooling and heating energy. Communication is via Modbus/TCP and all functionality is included in the software installed in the controllers of the individual products so no additional control equipment is needed. SMART Link+ saves time on site, saves energy and offers a user friendly interface.



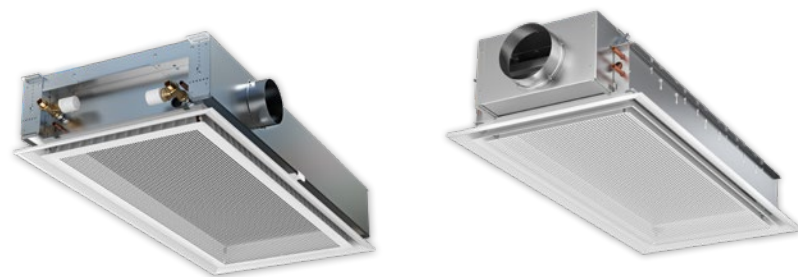
## PARASOL

### A comfort module for each requirement

**PARASOL is a comfort module that combines climate beam efficiency with air diffuser flexibility**

A comfort module differs from a climate beam as it distributes air in four directions instead of two. This maximizes the area for the mixture of supply air with the room air, which enables you to take out a high capacity, but without occupying more ceiling space than necessary.

All Swegon comfort modules is a perfect match to the SMART Link+ function. By always having the perfect system temperature on the incoming water we can guarantee the best indoor air quality and temperature in the room and at the same time have the best energy performance.





# Get the most of your SMART Link+

## Cooling and heating production

Energy efficient cooling and heating production for all climates. Swegon's highly efficient chillers and heat pumps are available in several different configurations. They satisfy all specifications for projects within comfort, IT applications and industry. Chilled water circuits are flexible; as plant, pipework and airside equipment can easily be modified, replaced or repositioned without affecting each other.

The already energy efficient production units from Swegon together with the SMART Link+ function will give you an outstanding energy permanence to your plant by linking the actual loads in the building to an optimized heating and cooling production.

SMART Link+ is available on the most of Swegon production units.



Feel good **inside**

