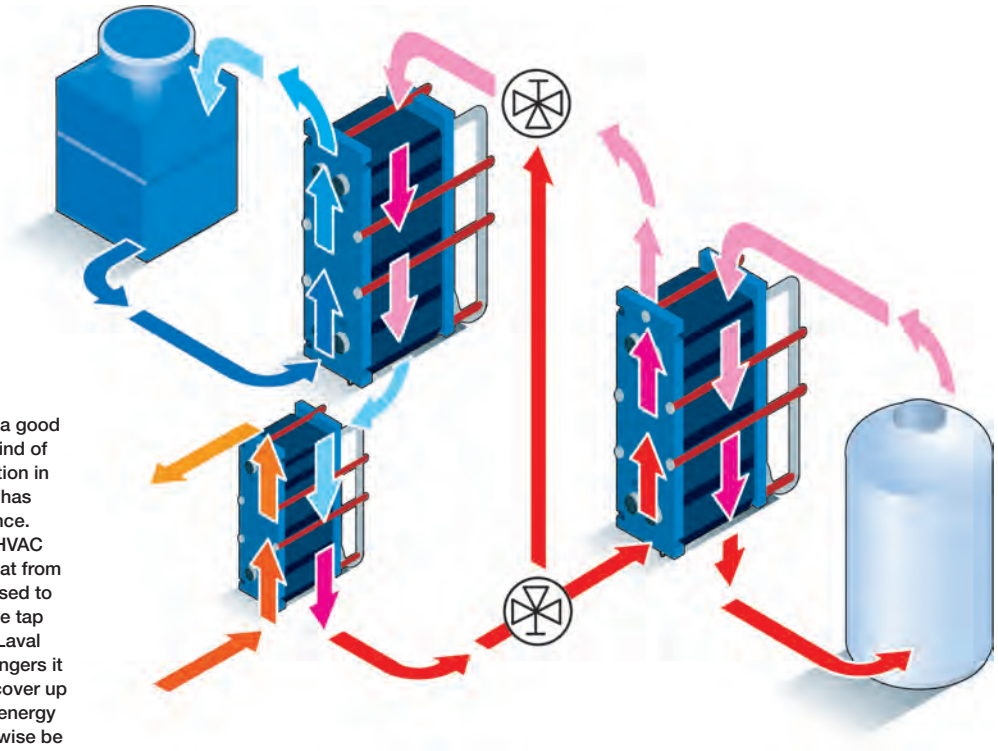
Heat recovery

In an optimized HVAC system, cooling and heating are integrated and waste heat and cold will be re-utilized in the system. Heat recovery is one often-neglected area where plate heat exchangers can be profitably used.

There are large potential savings as soon as there is a demand for hot tap water or other types of heating at the same time as the cooling system is running. Some types of buildings where this may be the case are hospitals and hotels, or different production facilities, for example in the chemical, pharmaceutical and beverage industries.

Alfa Laval has many years' experience from both cooling and heating applications and from customizing this kind of optimized system.

The heat-recovery plate heat exchanger will be installed between the condenser and the cooling tower, recouping part of the energy that would otherwise be let out in the air. While recovering heat for pre-heating tap water, for example, the cooling need decreases on the condenser side. Thus the savings will not only be the energy recovered in the heating system, but also the energy not wasted in the cooling system. Due to the extreme efficiency of the plate heat exchanger it is possible to recover up to 95 percent of the energy that would otherwise be wasted. This is often more than enough to offset the capital and operating costs of the plate heat exchanger. In this case the heat exchanger should be of the double-wall type, with double walls between the condenser circuit and the tap water, to give extra protection against contamination.



Heat recovery is a good example of the kind of system optimization in which Alfa Laval has years of experience. In an optimized HVAC system waste heat from cooling can be used to warm for example tap water. With Alfa Laval plate heat exchangers it is possible to recover up to 95 percent of energy that would otherwise be wasted.