Project Report

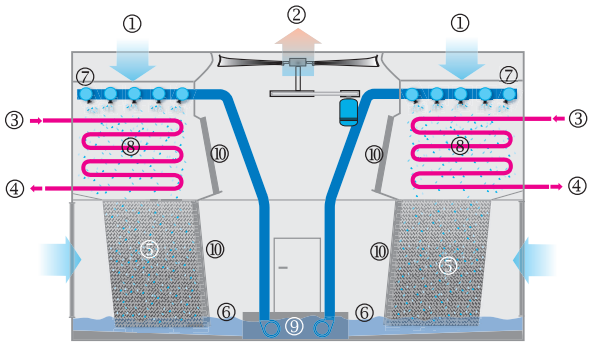
Grolsch Brewery, Enschede, The Netherlands

Grolsch, has a rich beer brewing tradition that goes back to 1615. Historically it had two breweries separated less than 30 km apart. Since working with one single brewery is more efficient, the decision was taken in 1998 to close down the existing breweries and build a brand new brewery in Enschede with a yearly production capacity of 3,2 million hectolitres.

(4) CXV-T805 Evaporative condensers Capacity 12 MW, R717 at typical operating conditions

The Most advanced Heat Transfer Concept

The vapour to be condensed is fed to the four condensers each having two separate condensing coils. These coils which are continuously wetted on the outside by 2 individual spray water systems and pumps, located inside the condenser. Air is simultaneously drawn downward over each individual coil section, causing a small portion of the water to evaporate. This evaporation rejects the heat from the coils, and in doing so, condenses the vapour inside it into liquid. The water is further distributed over two individual wet deck surfaces where it is cooled by fresh air being drawn in from the side, before it is re-circulated back over the condensing coils. The heated air discharges at the top. The single Low Noise fan and drive system provides an optimal energy efficiency and limited noise emission.



1. Air in; 2. Air out; 3. Vapour in; 4. Liquid out; 5. Wet deck surface; 6.Cold water basin; 7. Water distribution system; 8. Coil; 9. Spray Water Pump; 10. Eliminators.

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Focus on customer requirements

In addition to the capacity requirements for the ammonia condensers the Grolsch brewery was faced with four additional challenges to which the condensers needed to apply, these are

1. Specified sound criteria : Due to the location of the brewery in a semi-residential area. Day: max. 95 dB(A) PWL; Night: max.85 dB(A) PWL.
2. Low energy consumption : For high operating efficiency and environmental concerns.
3. Low refrigerant charge : Imposed restriction due to local Ammonia legislation.
4. Easy access & maintenance : For optimum operational reliability.

BAC's Superior Product benefits respond to all customer needs

1

Low noise fans and full sound attenuation provide a total sound power level for the (4) condensers of 92 dB(A) which fully meets the requirement. At night-time the fan speed and noise level are further reduced to 85 dB(A) sound power level.

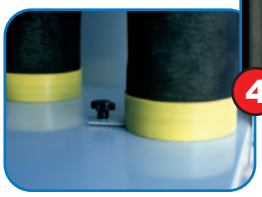
2

A single low noise axial fan per condenser is installed offering 50 % lower energy consumption versus traditional centrifugal fans.

3

Each condenser is equipped with 2 compact coils offering a 40 % Lower ammonia charge when compared to traditional induced and forced draft condensers.

Easy removal of acoustical baffles for inspection and cleaning of the wet deck surface and water basin.



4

4

Easy top access for inspection of water distribution system and coil without the need to remove any components or shut down of fan - or pump motors.

4

Compact and easy removable PVC eliminators allow unique access to the coil for inspection on scale or corrosion.

4

Internal ladder and service platform provides access to fan, motor, drives and coil.

4

Large hinged access door, internal walkway and spacious plenum for access to mechanical make-up, spray pumps and strainer, as well as other basin accessories. Pumps are located in a separate pump well inside the condenser.

Stong focus on customer needs resulting in new innovative products

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