



**Fluid Dynamics**

*Hard water solutions since 1973*

# CASE HISTORY

BETTER FOOD CO. LTD.

Part of the Betagro Group

TREATING EVAPORATIVE CONDENSORS

# THE CUSTOMER



Betagro are Thailand's biggest food producer manufacturing a wide range of high quality food products for the south east Asia market. Eight large evaporative condensers cool gas that circulates between these condensers and the chillers that keep the packaged food and ingredients at the correct temperature

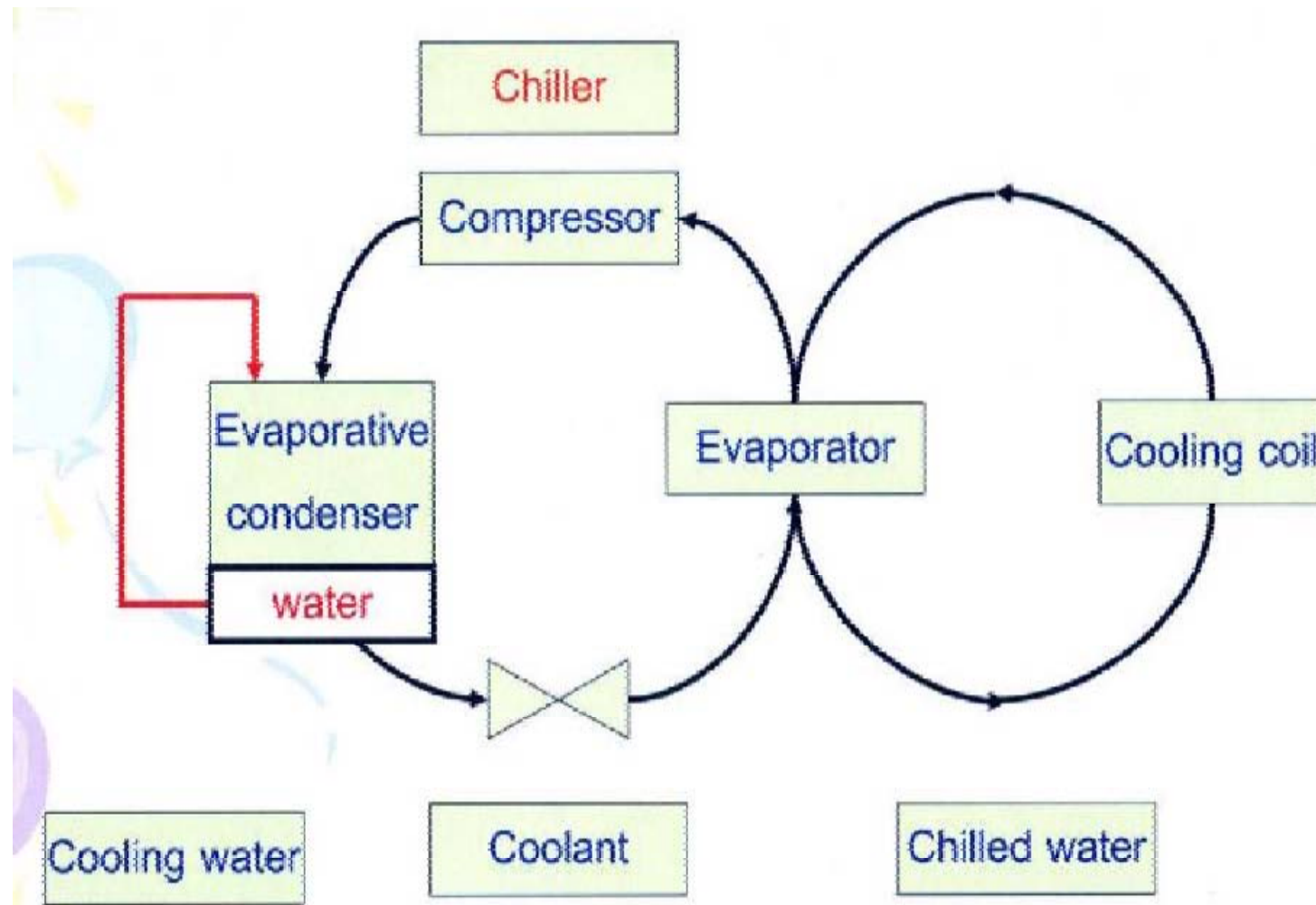
# THE PROBLEM



SCALE THICKNESS ON TUBES BEFORE  
INSTALLATION 2.00MM

To the left is a picture of the tubes that carry the hot gas. Water is sprayed via nozzles above the hot tubes which are used to cool down the pipes. The water however contains high amounts of hardness and this deposits as a hard scale on the outside of the tubes which considerably slows the cooling process.

# THE SYSTEM



# INSTALLATION



Condensor number 8 had been a particular problem in the system, despite being treated with a chemical dosing system.

(4" Colloid-A-Tron pictured on the inlet to the condensor)

# 4" COLLOID-A-TRON



# THE RESULTS



Water samples were taken on a regular basis from each condensor. The bottle on the right labelled 3 is the sample taken from condensor no 8. Notice how the solution is a lot darker. This is deposits that had been absorbed by the treated water inside the condensor and was an encouraging sign that the Colloid-A-Tron was removing the existing scale on the tubes

# THE RESULTS



SCALE THICKNESS ON TUBES AFTER 75 DAYS OF INSTALLATION 0.05MM AT WORST PLACE

After 6 months of installation the condenser was opened up and examined. As can be seen from the pictures a majority of the scale has been removed from the treated water and the metal of the pipe has been exposed.

# THE RESULTS

Cycles of concentration, the amount of fresh water that is added to the re-circulating system have also been increased by up to 200%. This means the condenser is using considerable less water saving the customer a considerable amount on water usage.

Further benefits including a decrease in power usage as detailed on the next page.

# ENERGY REDUCTION

