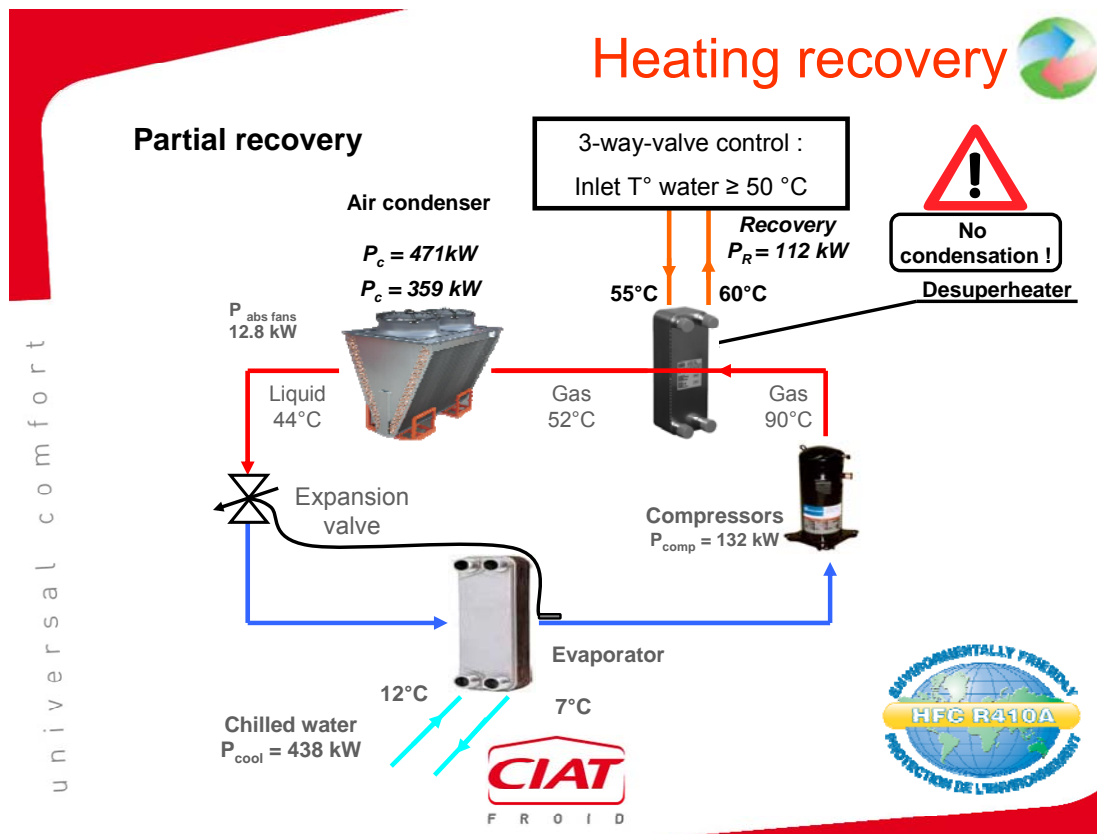


Energy Saving using heat recovery from chiller

Partial heat recovery:



With chiller having cooling capacity at 438kW, we can recover the hot water at 60°C with capacity 112kW.

There are 2 chillers => recover 224kW hot water.

This recovery can replace the heater from AHU with total capacity at 142kW
And hot water supply for 60 bedroom at 82kW

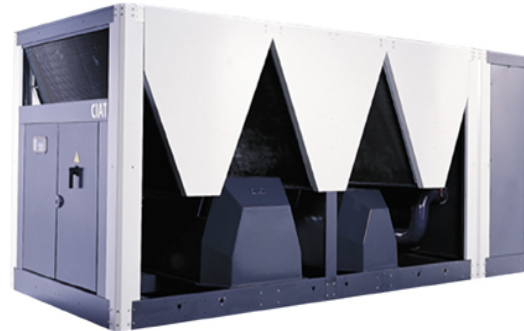
Cost saving :

Electrical tariff (normal) = 1,650VND/kW

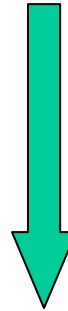
Calculation base on 30% of maximum recovery capacity

Saving = 224kW x 1650VND/kW x 24h/ day x 26days/month x 12 x 30%= 830,269,440 VND

HOT WATER FOR SANITARY USE



Hot water use
replace hot water heater for
50 Patient room (82kW)



Recovery capacity
replace electric
heater in AHU
(E.D.H) – 142kW

HOT WATER FOR DEHUMIDIFICATION



Investment cost :
Investment on Equipments: Heat exchanger, pump, AHU hot water coil ...
Estimate at = 300,000,000 VND

Estimate on piping (without count of electrical capacity reduce : Transformer,
Genset, Panel, Cable...)
Estimate at = 200,000,000 VND

Return = 500,000,000/ 830,269,400 = 7 months!!!!

System description

The system comprises 1 (or 2 incase the chiller have 2 refrigerant circuit) heat exchanger install at the outlet of hot gas from the compressor.

The heat exchanger will take the heat from the hot gas at 90oC at the discharge of the compressor. The hot water can reach 60oC can be use for:

1. To replace the electrical heater at AHU (E.D.H) with total capacity at 142kW
2. The remain capacity (82kW) can be use as hot water in sanitary system to replace the conventional hot water heater in patient room.

In case, the demand of heating capacity is less, the heat will be rejected to the atmosphere through the air cooled condensing unit.

The exchanger is built in factory, no thing to be done at site. (Except water piping distributes hot water to the AHU or the hot water tap.)

Beside that, you can save on:

- Reduce the transformer capacity
- Reduce the generator capacity
- Reduce the individual hot water heater for each room
- Reduce the size of Main distribution Panel.