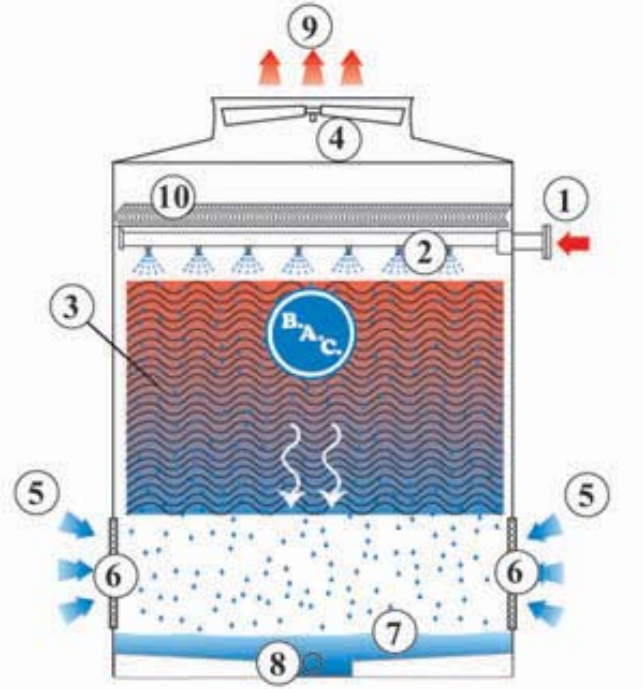
Necessary Considerations When Proposing a Cooling Tower Installation

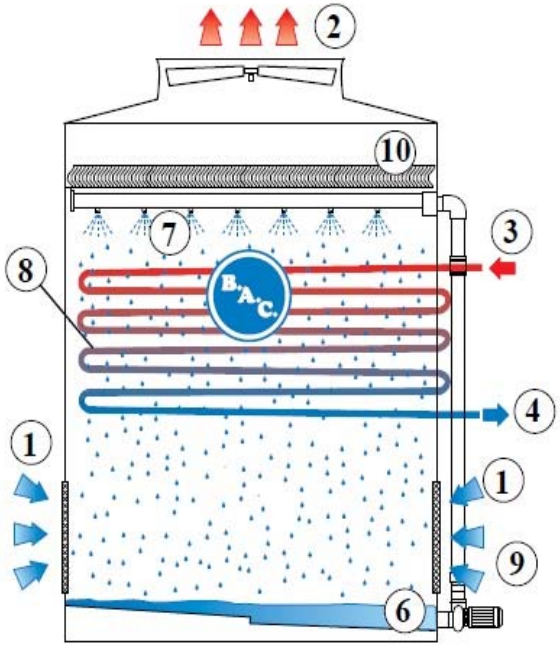
Open or Closed Loop System?

- Both systems carry their own advantages and disadvantages, open systems requiring more consideration than closed.

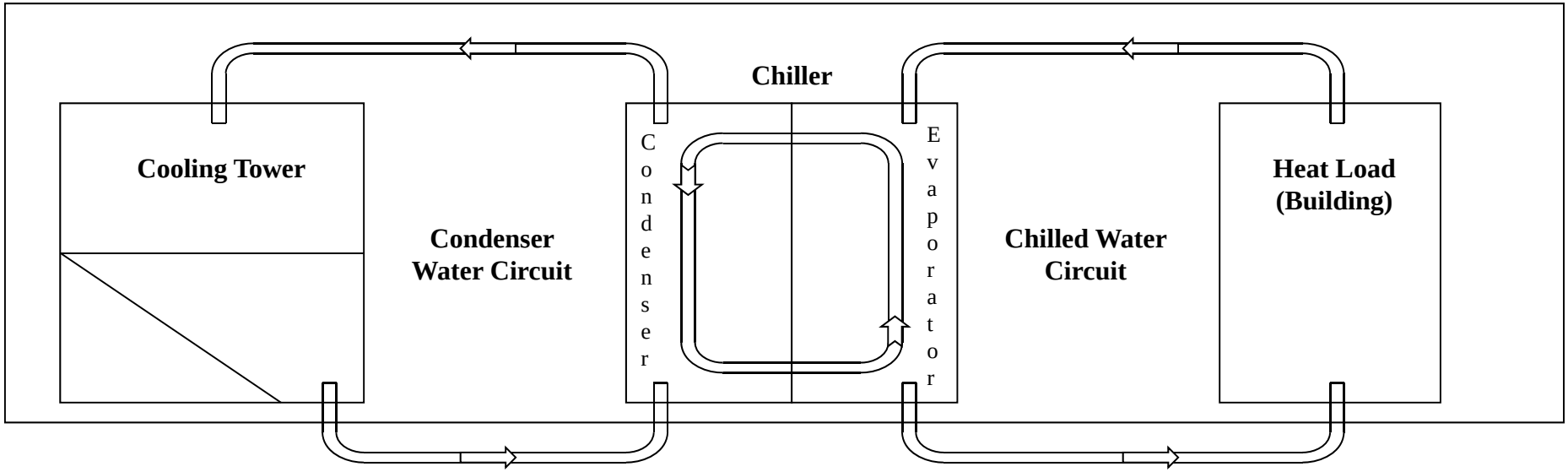
Open Loop Cooling Tower



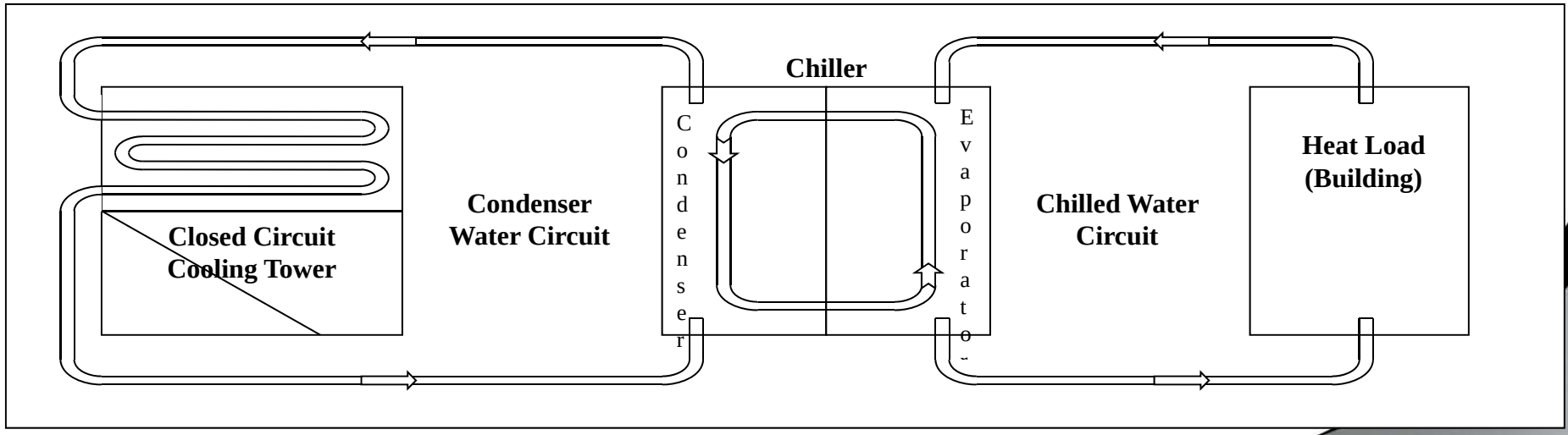
Closed Circuit Fluid Cooler



Open Loop



Closed Loop

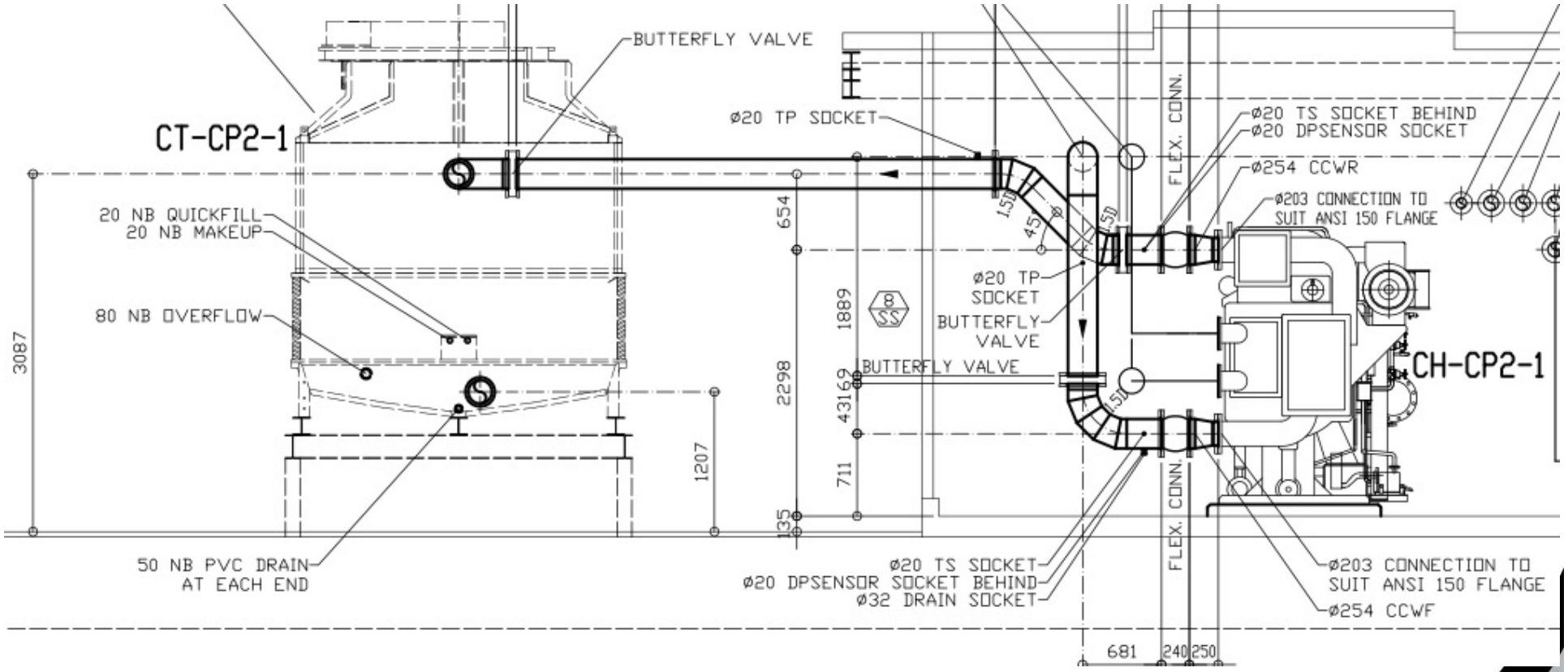


Flooded Suction

- Only a consideration in open loop systems.
- Base of cooling tower should be higher than the discharge flange of the condenser water pump as a minimum.
- Pump should be as close to the cooling towers as possible.
- Towers should be raised further if additional pressure drop is expected between the tower and the pump/s (long pipe run).

Flood Back / Draw Down

- No pipework should run above an open cooling tower.
- Too much pipework above the cooling tower will cause the tower to overflow on shutdown.
- When re-started, the system will attempt to re-fill with water and in turn drain the sump, allowing air into the pipework.
- If tower is not at the highest point water level in the system can also equalise by returning back into the tower through the basin line. Backflow prevention devices **can not** always prevent this.


CT-CP2-1
BUTTERFLY VALVE
Ø20 TP SOCKET
20 NB QUICKFILL
20 NB MAKEUP
80 NB OVERFLOW
3087
654
1889
2298
43169
711
135
1207
1.5D
45°
1.5D
1.5D
Ø20 TP
SOCKET
BUTTERFLY
VALVE
BUTTERFLY VALVE
FLEX. CONN.
Ø20 TS SOCKET BEHIND
Ø20 DPSENSOR SOCKET
Ø254 CCWR
Ø203 CONNECTION TO
SUIT ANSI 150 FLANGE
CH-CP2-1
50 NB PVC DRAIN
AT EACH END
Ø20 TS SOCKET
Ø20 DPSENSOR SOCKET BEHIND
Ø32 DRAIN SOCKET
FLEX. CONN.
Ø203 CONNECTION TO
SUIT ANSI 150 FLANGE
Ø254 CCWF
681
240
250

Recirculation

- Walls of any enclosure should never be higher than the discharge of the cooling tower.
- High walls will create an artificially warm/humid environment from recirculating moist discharge air.
- Ideally tower should be raised so the discharge meets the height of the walls as a minimum.
- As an alternative you can duct the discharge away from the enclosure, however this adds static pressure which needs to be compensated for.

Starvation

- Fresh air availability to any heat rejection system is critical to its operation.
- If fresh air is supplied via louvered walls, face area need to be sufficient to maintain required airflow at all time.
- Additional static also needs to be accounted for on the air intake side, as well as the discharge side.

Service Access

- All cooling tower models require differing degrees of access for maintenance. Items which require access will include:

1. Water distribution system.
2. Fill material / Coil.
3. Drift eliminators.
4. Air inlet louvers and cold water basin.

Allowance for Service Access and Inlet Air

- Requirements change depending on the product.
- There is no “rule of thumb” measurement.
- **Suggest you contact your equipment provider for their recommendations.**

New Installations Inc. Platforms and Walkways

BEFORE

AFTER