Domestic Hot Water

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Domestic Hot Water

Components

- Water heater
- Circulation pump
- Distribution piping
- Outlet nozzles and other flow devices

Typical Operating Parameters

- Should heat hot water to 140 F to kill legionnaire bacteria. Bacteria can colonize in hot water at 115 F or lower.
- Building code requires pumped circulating system when hot water piping exceeds 100 ft.
- Consider hot water storage for facilities that have high use periods such as barracks and dining facilities

Design Considerations

- Type of hot water use in building and schedule
- Number of building occupants
- Type of hot water heater, use of storage
- Use of smaller local heaters
- Use for recovered heat
- Use of booster heaters
- Energy source

Things to Check

- Water temperature
- Quantity of flow at points of use
- Heater efficiency
- Pipe insulation
- Potential use for recovered heat

Energy Waste – Domestic Hot Water

- Leaking valves
- Too hot temperatures

Energy Inefficiencies – Domestic Hot Water

- Excessive water flows
- Lack of insulation
- Not taking advantage of heat recovery opportunities
- Excessive distribution losses

ECM – Recover Heat from Shower Drain

- Preheats cold water going to shower
- Need 4 Ft long vertical drain run
- Recaptures 25% of heat in warm shower waste water
- Cost $1,000 for 4” drain

ECM - Install Low Flow Nozzles

- Showers
- Faucets
- Saves water and heating energy

ECM – Local Hot Water heaters

- Domestic hot water users remote from main distribution system might benefit from the use of local electric hot water heaters
- Saves pipe heat losses
- Quicker hot water
- Units fit under sink

Thank You

Questions?