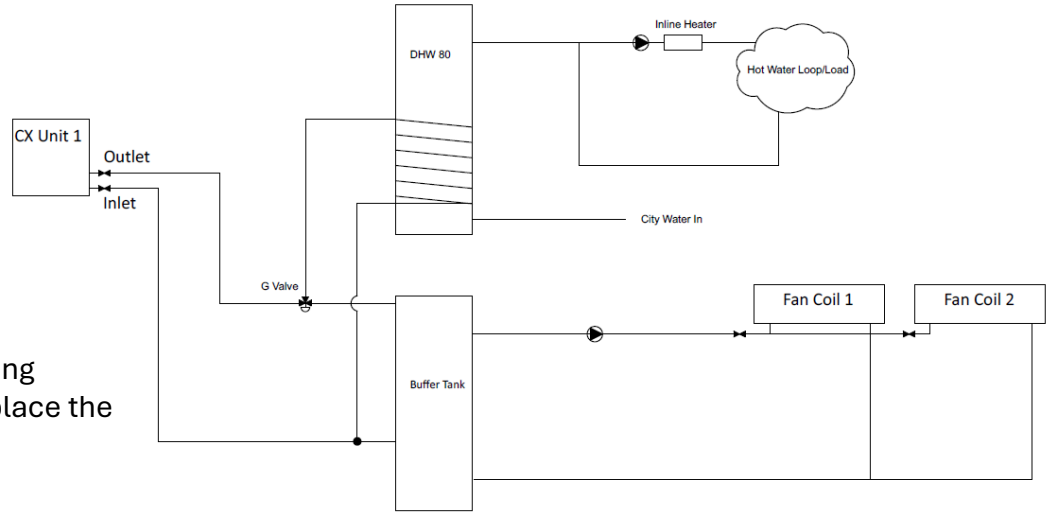
Using Re-Circulating Domestic Water Heating with an Air to Water Heat Pump

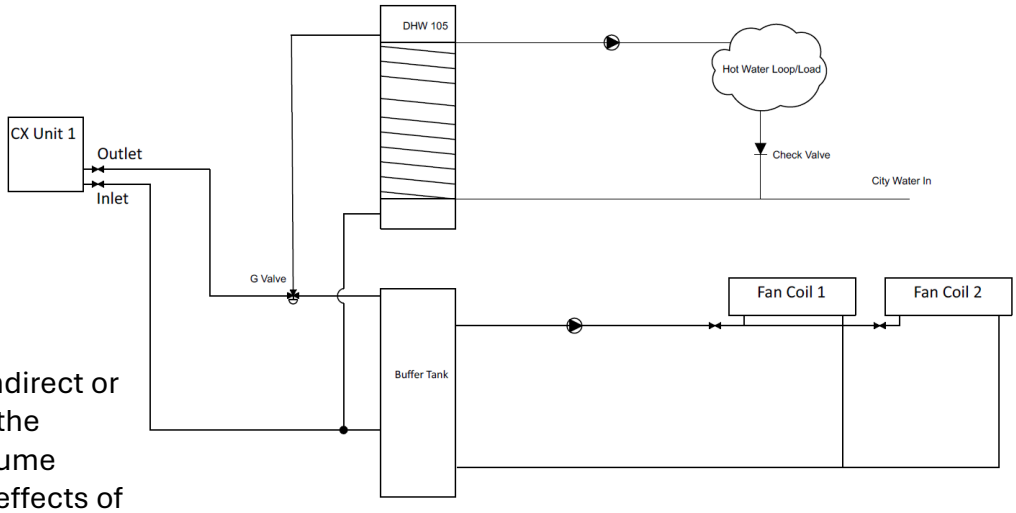
Generally, efficiency-minded customers don't use re-circulation systems due to wasted electrical energy, but they do save water. The economic balance is however unfavorable. More concerning, re-circ can cause performance problems with the heat pump as it must operate continuously under unfavorable conditions as it must replace very small amounts of lost heat on an ongoing basis.

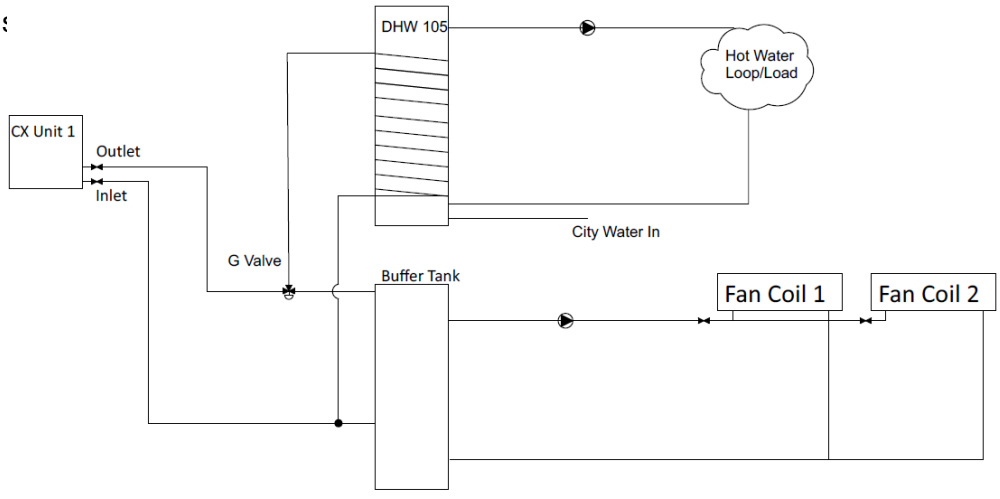
If you want to use re-circ with Chiltrix, below are three time-tested ways to do it. In the first example below, using a DHW80, the hot water used by the customer is heated by the heat pump however the small parasitic loss that occurs in the piping is handled by a modulating tankless heater. In the second and third examples, we use a larger tank (DHW105) with a larger coil inside, to mitigate the negative effects.

DHW80
Use a small modulating tankless heater to replace the stand-by losses



DHW105
Uses either standard indirect or reverse-return design, the larger coil and tank volume mitigates the negative effects of continuous standby loss replacement





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