

Case Study Black River Technical College

The attached temperature charts depict the hot water temperatures at Black River Technical College in Pocahontas, Arkansas. 100% of the hot water is being produced by a Hydro-Temp Earth Coupled heat Pump.

Chart:1 During the occupied time (5 A.M. till 5 P.M.) while the air conditioning is running, all the hot water is being heated **FREE**, as a by product of cooling (patent #4,249,390). During the unoccupied time, with the building's hot water circulating pump turned **off**, the hot water tank cools down very little, so no water heating is required.

Chart:2 During the occupied time, once again the hot water is being heated **FREE**. How-ever, in this case, during the unoccupied time the building's hot water circulating pump is now turned **on**. This allows extreme heat loss to occur.

With no air-conditioning taking place during unoccupied hours, the Hydro-Temp unit is forced to turn on in the Priority water heating mode , heating the water (unnecessarily) eight times during the unoccupied time.(when no hot water is needed)

Note: hot water circulating systems are often necessary on large buildings. Most people are unaware that even though the piping is insulated, extreme heat loss will still occur. This "waste heat" often times has to be removed (once again) by the air conditioning system. When the hot water is not being used (unoccupied times), it should be left in the tank, where the heat loss is minimal.

Chart 1

Hot Water Tank Temperature with Building Loop Pump Off

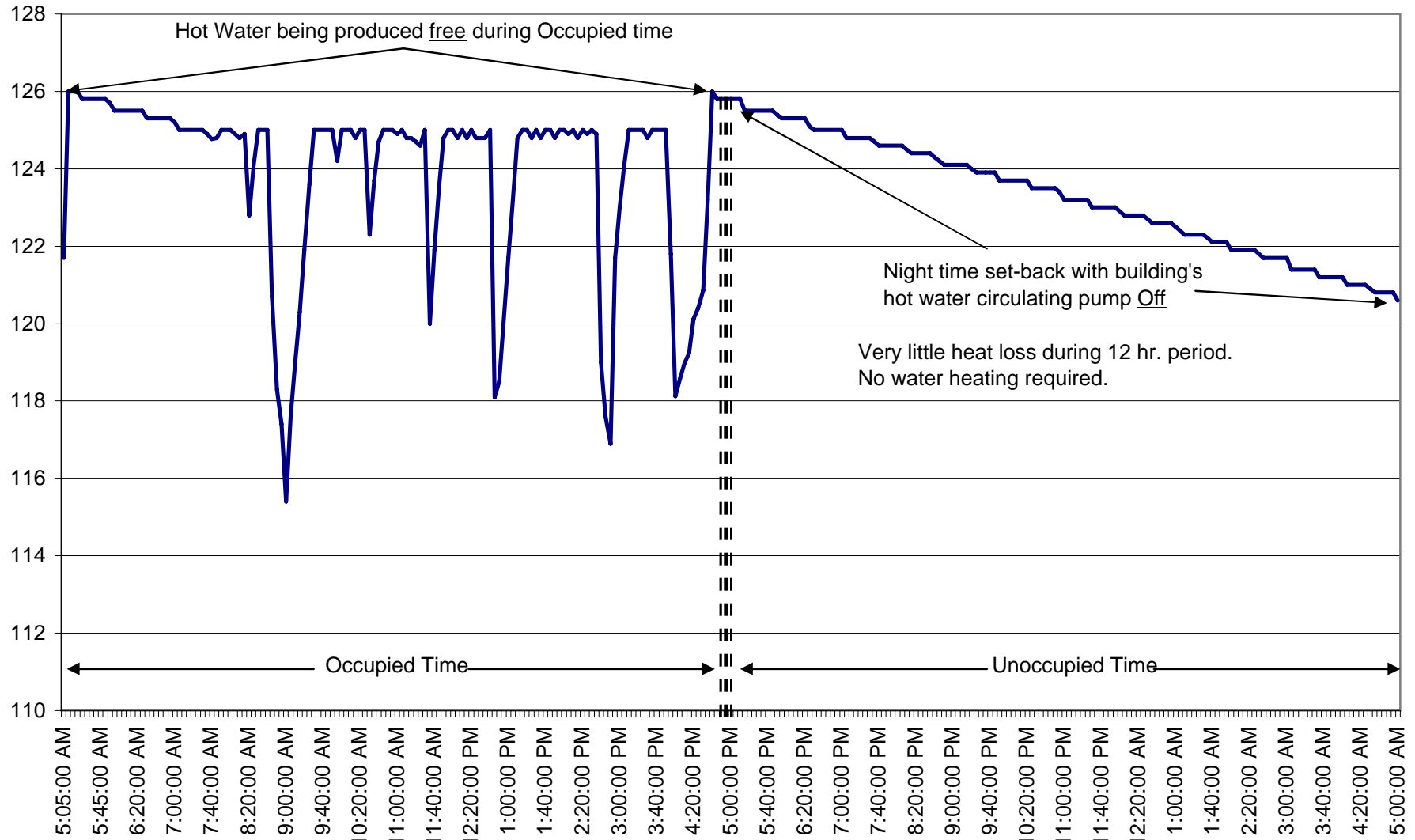
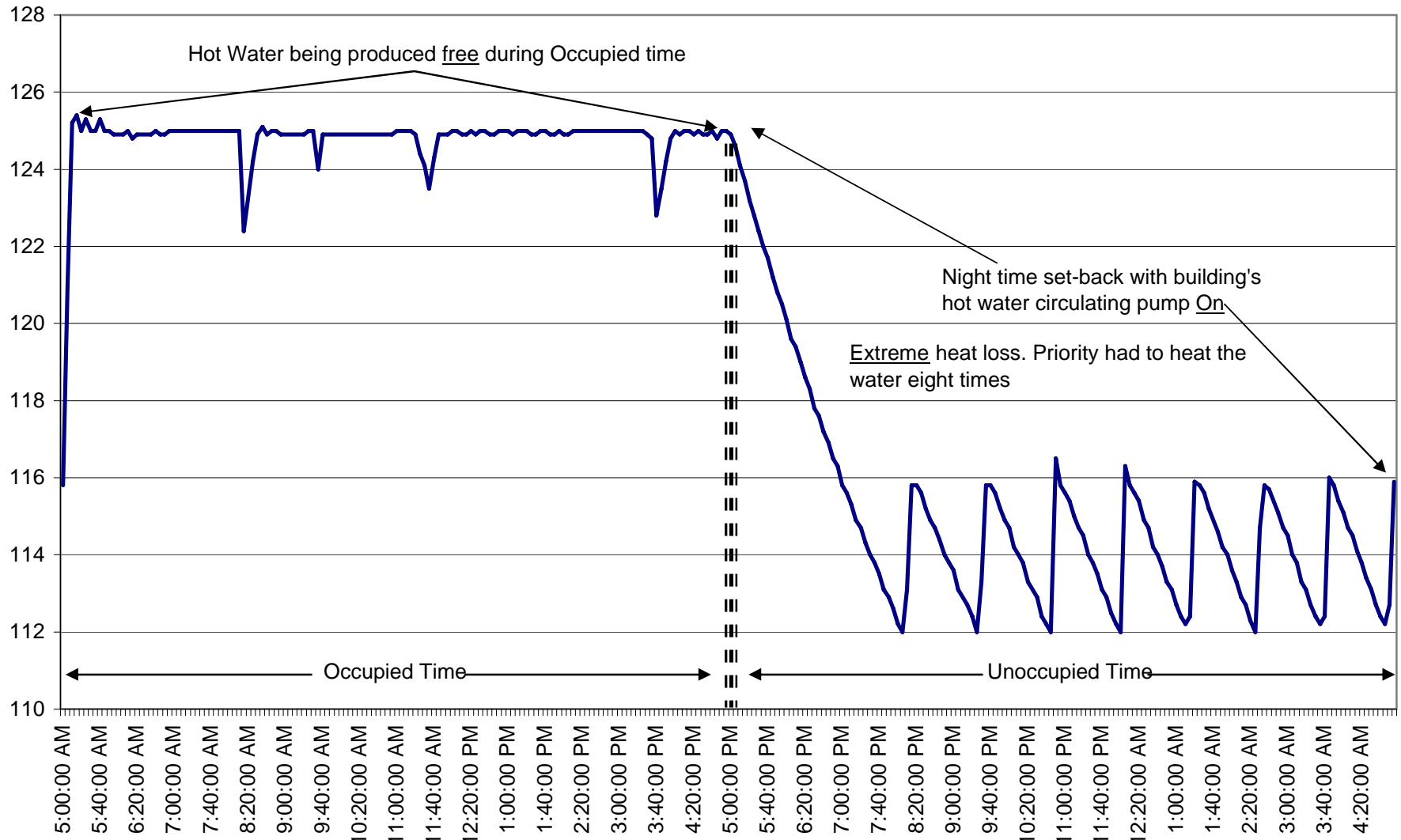


Chart 2

Hot Water Tank Temperature with Building Loop Pump On





SLOTTED
EXPANSION TANK

SAFETY
READ INSTRUCTIONS
BEFORE OPERATING
THIS APPLIANCE
FOR YOUR PROTECTION
AND THE PROTECTION
OF OTHERS, READ
THESE INSTRUCTIONS
AND THE INSTRUCTIONS
FOR THE GAS CONTROL
VALVE AND BURNER
OPERATION.
DO NOT ATTEMPT
TO REPAIR OR
OPERATE THIS
APPLIANCE UNLESS
YOU ARE A QUALIFIED
TECHNICIAN.
IF YOU ARE NOT
A QUALIFIED
TECHNICIAN,
CALL A QUALIFIED
TECHNICIAN FOR
REPAIR OR
OPERATION.



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Earth Coupled Heat Pumps