



## **Encore Central Energy Plant**

The Encore Central Energy Plant (CEP) will allow for centralized production and distribution of cooling energy to the entire Encore mixed use development site. The chiller plant will produce chilled water that is transported via an underground piping network to each building lot.

Chilled water is produced through a combination of a centrifugal chiller and a thermal ice storage system. The chiller and ice storage system will produce 39°F chilled water, which is pumped to each building through the underground piping network via chilled water distribution pumps. Heat rejection from the chiller is accomplished through evaporative cooling towers.

The components that make up the Encore CEP include:

- 5,400 SF single-story concrete block chiller plant building
- 7,500 feet of underground piping in various sizes from 20-inch to 2-inch diameter
- (1) Trane CVHF 1000-ton ice making centrifugal chiller (1,000-nominal ton capacity)
- (24) Calmac ice storage tanks
- (1) Marley 2-cell cooling tower
- (8) system pumps
- (1) well pump for make-up water
- Trane Tracer SC Building Automation System for chiller plant control

Key Facts:

- The central chilled water plant is a 40% more energy efficient means of cooling than traditional residential HVAC units and has a life span of 30+ years as compared to 10 years for residential systems.
- The ice storage system allows the chillers to run at night when electric rates are lower and power plants are at their most efficient. This not only reduces the electric cost for cooling Encore buildings, but reduces greenhouse gas emissions associated with the production of electricity at Encore.
- Each building at Encore contains a heat exchanger, which allows for the transfer of energy from the chiller plant system to the building. This configuration creates physical separation between the plant and building systems.
- Chilled water consumption is metered at each building and is billed monthly.
- Condensate water that is produced at each building is pumped back to the chiller plant for use as cooling tower make-up, resulting in substantial water conservation.
- The Encore CEP has been designed to provide a maximum capacity of 4,500 tons of cooling at final build-out, which is anticipated to include almost 2.6 Million SF of residential, commercial, and retail building space. Currently, Phase I of the design and construction can accommodate up to 1,500 tons of cooling capacity.
- It is anticipated the chiller plant build-out will incorporate two to three additional phases of construction at an estimated cost of approximately \$4.5 Million.
- All chiller plant materials and equipment comply with the Buy America provisions of the America Recovery and Reinvestment Act of 2009. The project was constructed entirely with local labor and achieved a MBE participation of over 30%.



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