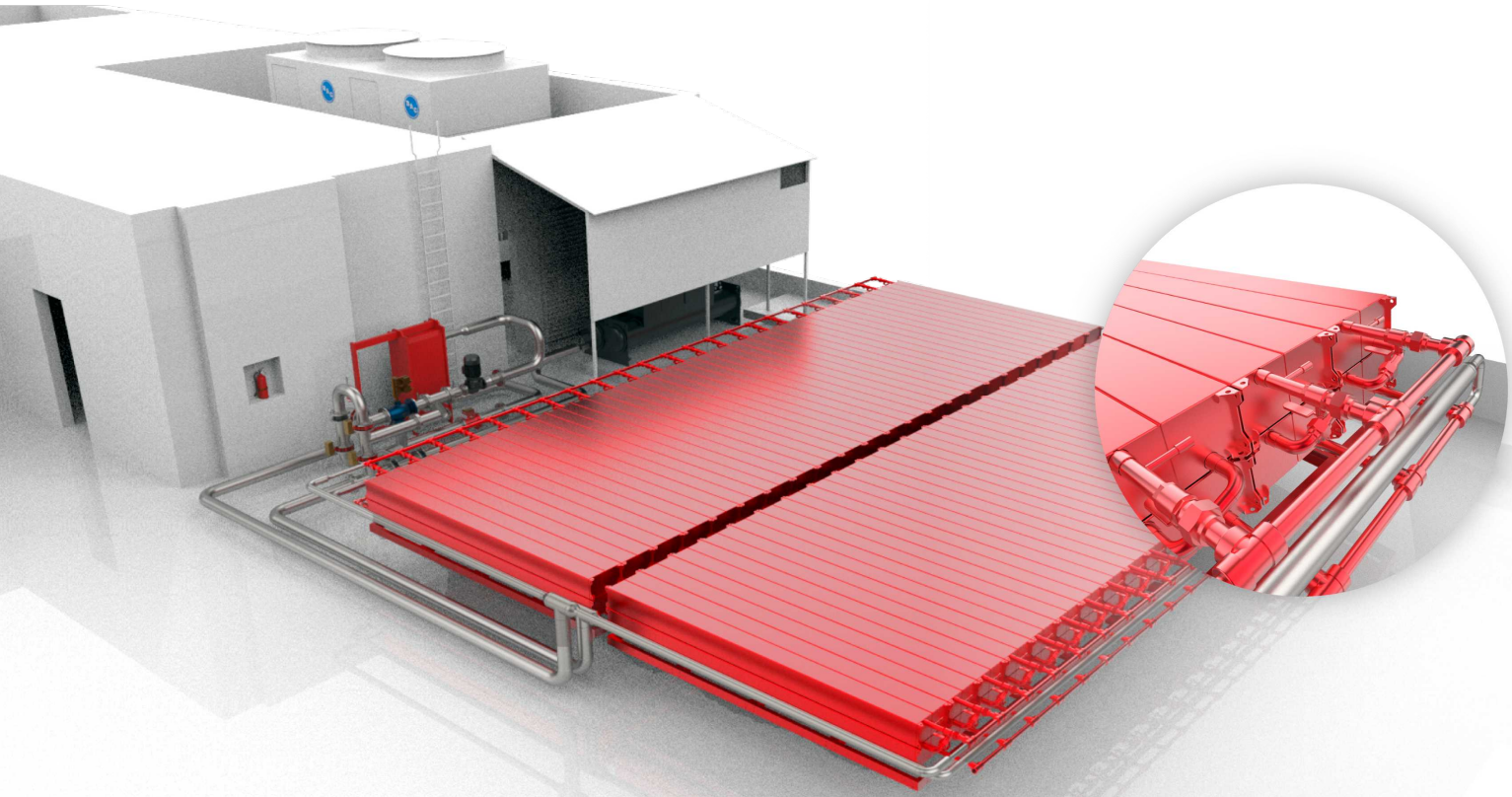
NOSTROMO

Reliability | Cost Savings | Decarbonization

IceBrick® Gen 2 System Specifications



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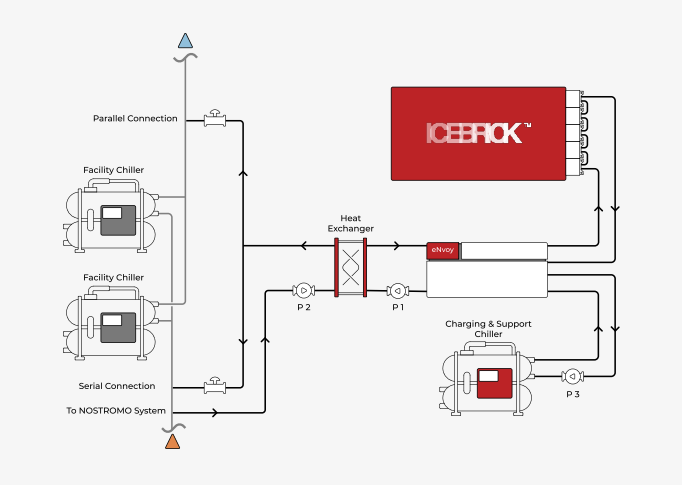
Description

Nostromo's patented IceBrick® technology features a clean, safe, and cost-effective water-based Thermal Energy Storage (TES) system designed to minimize the 70% peak electric load consumed by commercial cooling. This modular and compact unit is perfect for retrofit projects, helping commercial and industrial buildings to dramatically reduce energy costs, improve energy efficiency, and boost operational resilience.

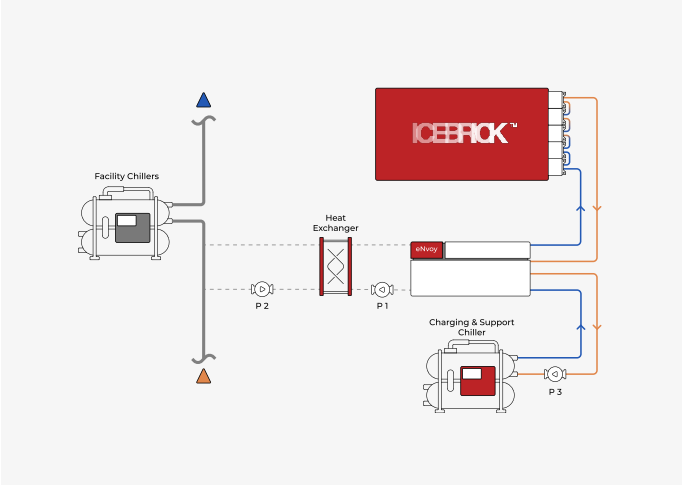
IceBrick® Gen 2: Performance and Technical Value Proposition

Flexible Design	Designed for both new builds and retrofits.The system's energy density per square foot is significantly higher than other TES technologies and can be installed on most rooftops in basements, or as integral element of the architecture.
High Performance	Industry leading 94% DOD (Depth of Discharge at 5 hours and above 80% at 3 hr | +90% TRTE (Thermal Round Trip Efficiency) stable and controllable discharge.
Backup Cooling	Minimize downtime risk due to failure of cooling systems.
Operational Ease	Almost Maintenance Free. Opposed to Ice-on Coil, Encapsulated ice technology minimizes the probability of failures (glycol leakage into the body of water) and ensures you stay running without worry.
Eco-Conscious	Environmentally friendly, non-toxic, non flammable and 100% recyclable.
U.S. Manufacturing	100% U.S. Made delivers superior supply chain stability, minimizing global logistics risks and reducing lead times.



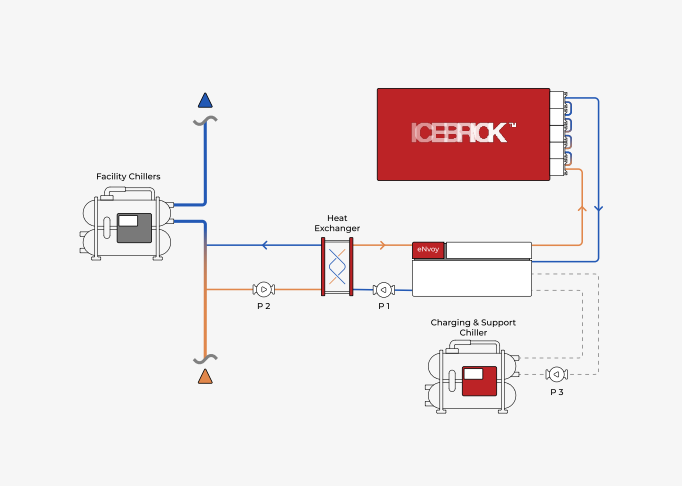
Operation Modes

All modes are preconfigured in the IceBrick® system's controller. They are customizable.



Charge Mode

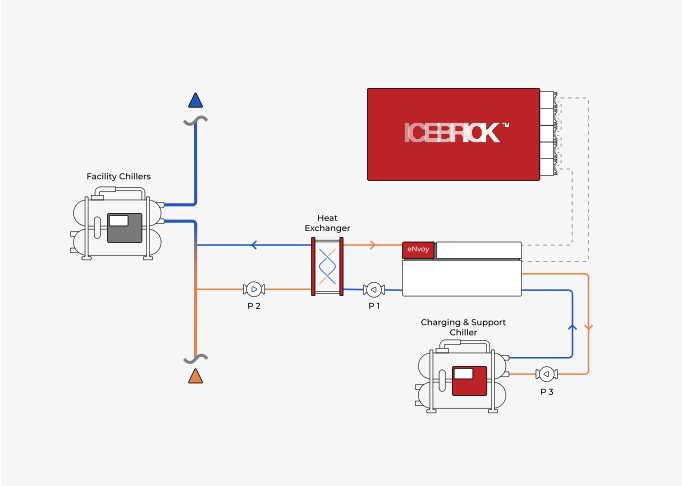
The charging process of the IceBrick® system is performed under optimal chiller working conditions.



Discharge Mode

Maintain planned cooling capacity using combined temperature and flow control.

Smart control mechanism: prioritizes the most energy-efficient strategy and increases flow only when needed.

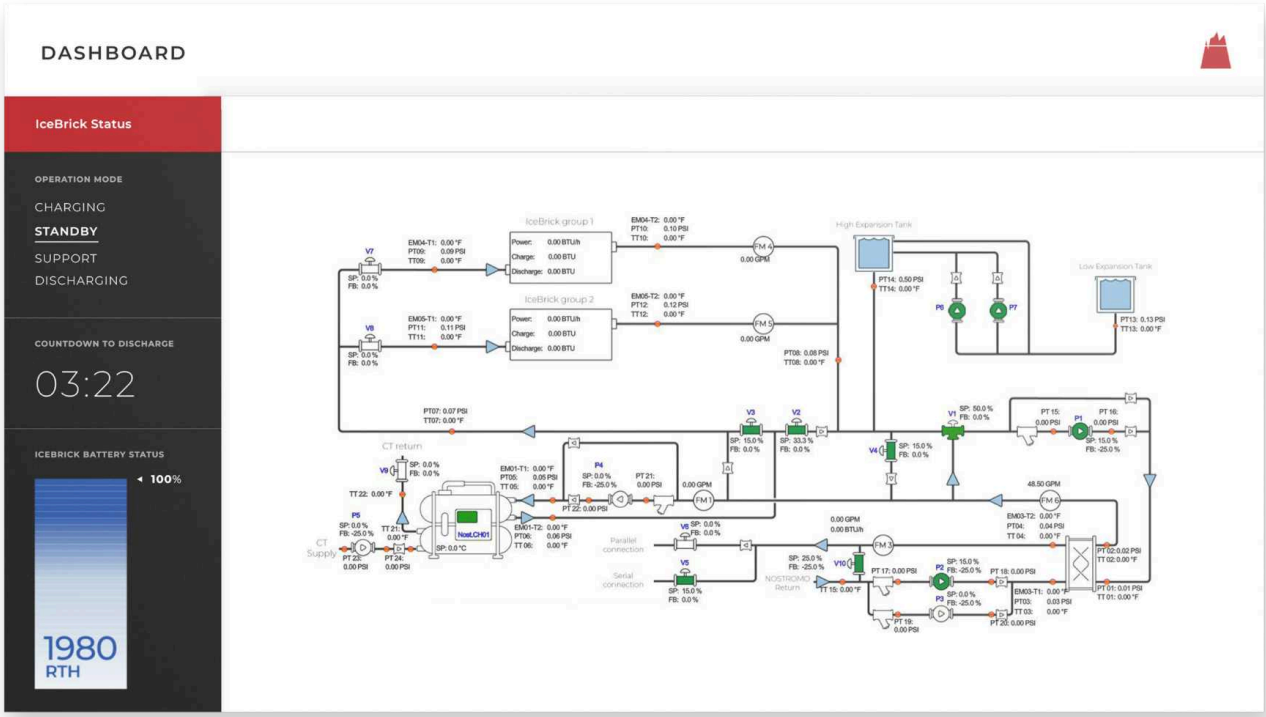


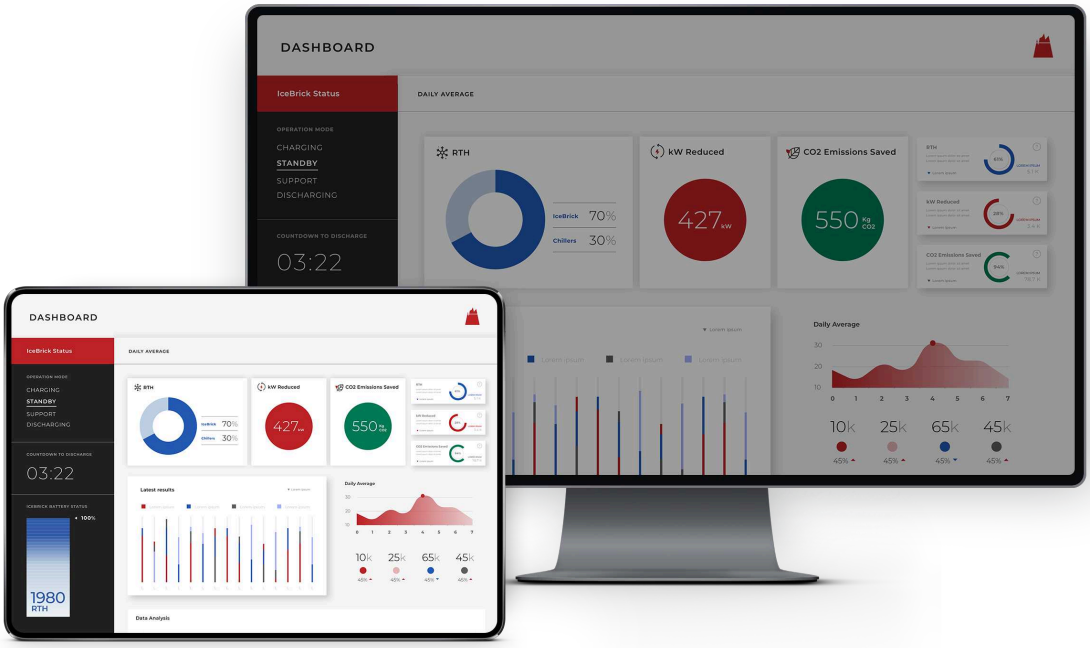
Chiller Support Mode

Pump P3 & P2 - Stable flow rate according to charging (support) chiller design condition.

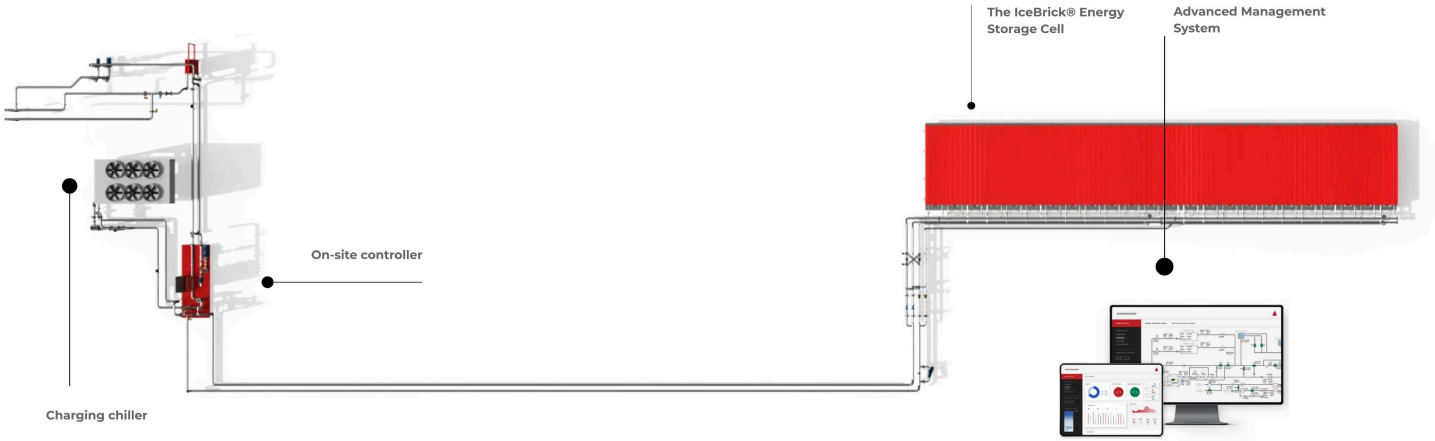
On-site independent control panel

Allows operation of the system. It is fully programmable, Using MQTT cyber-security communication protocol.





System Overview



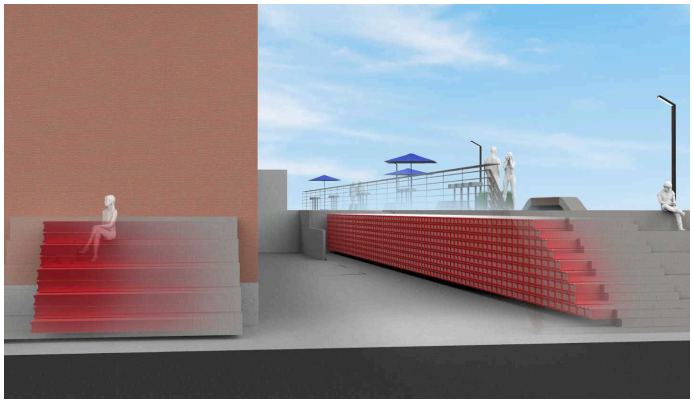
A Modular System

Modular and Compact Design

The IceBrick® is compact and can be positioned in a variety of configurations, utilizing unused spaces or becoming part of the landscape.

Minimal Real Estate Footprint

The IceBrick® system can be stacked and has unprecedented usable energy per sq ft.



ICEBRICK® System Specifications

Typical Configuration Measurements	Stack	Wall	Roof
Formation	Up to 12 high	2 wide along walls	2 high, spread on roof
Area in example	14' x 13.3' x 186sqft	24 bricks 14' x 3.3' x 46.2sqft	20 bricks 14' x 16.67' x 233.4sqft
Energy Density	4.75 ton-h / sqft	4.75 sqft	.79 ton-h / sqft
Other Options	Maximum 12 high according to room size	1 or 2 brick wide up to 12 high along walls	1-3 brick high according to roof or support frame loading

Measurements & Specifications of one IceBrick® unit

	Imperial	Metric
Dimensions	14' x 20" x 10"	(420 x 50 x 25cm)
Capacity	9.5 Ton-Hrs. (~8-12.5 kWh- equivalent)	
Weight	1354 lbs	614 kg
Water volume (in capsules)	84.6 gal	320 L
Number of capsules	192 capsules per IceBrick	
Inlet/Outlet connecting tubes	1.5" grooved connection (Victaulic style 75 flexible coupling)	
Solution	25%-30% Propylene Glycol I 70-75% Water	

Operating Envelope

Charging temperatures: First for 70% of the energy	24 °F	- 4 °C
Charging temperature: Last 30%	18-20 °F	-7 to -8 °C
Discharge temperature	32-43 °F	0-6 °C
Flow Rate	100-420 GPM	24-100 m3/h
Pressure drop	7.3 psi	0.5 bar

Measurements & Specifications of one IceBrick® unit

Min Floor Loading (1 High) - Roof	75 lb / sq ft	375 kg / m2
Max Floor Loading (12 high)-Ground	900 lb / sq ft	4,500 kg / m2
Min Energy Density (1 High)	0.44 Ton / sq ft	5 Ton / m2
Max Energy Density (12 High)	5.3 Ton / sq ft	60 Ton / m2

Performance

Thermal Round trip efficiency	90-95%
Depth of discharge	94% at 4 hour discharge
Maximum Discharge Rate	3 Tons of stable power rate at 50°F (10°C) inlet & max outlet temp. 41°F (5°C)
Discharge Time	2.5 hours - 10 hours. Short to Long Duration possible

Learn More

Gen2 _v2.0_2026-02