

# 11 Madison Avenue

*Turnkey Thermal Storage Project • New York City*

## About 11 Madison Avenue

Featuring art deco styling, 11 Madison Avenue was constructed in 1932 as part of the headquarters for the Metropolitan Life Insurance Company. The building was originally designed to reach 100 stories which would have made it the world's tallest building during that time. The Great Depression, however, limited construction to its current 30 stories. 11 Madison Avenue currently serves as national headquarters for Credit Suisse, a global banking firm that operates in more than 33 countries on five continents.



## Building Type

2.2 Million square feet office building

## Project Team

- Credit Suisse
- CALMAC Manufacturing Corporation – Thermal storage tanks
- ECM Energy Management Services
- New York State Energy Research and Development Authority (NYSERDA)



*One of three 800-ton Trane chillers installed at 11 Madison Avenue as part of a thermal storage system.*

### Systems Installed

- Three 800-ton Trane high-efficiency centrifugal chillers
- 64 CALMAC ice storage tanks
- Plate-and-frame heat exchangers, pumps and related equipment

## Thermal Storage Saves Energy, Focuses On Environment

11 Madison Avenue is a 2.2 million square foot office building that serves as the national headquarters for Credit Suisse. As one of the world's leading banks, Credit Suisse provides clients with investment banking, private banking and asset management services worldwide. Trane partnered with Credit Suisse to meet their air conditioning, energy and environmental challenges.

### Challenge

Faced with replacing an outdated chiller plant at the end of its life cycle, Credit Suisse explored the prospects of a high performance building that addressed the overall goals of energy savings, improved plant resiliency and environmental consciousness.

### Solution

As part of the plan to improve the building's energy performance, Credit Suisse brought in Trane's New York/New Jersey Energy Services Group to develop a solution. After completing a detailed building analysis, the Trane Energy Services Group proposed a thermal storage solution to shift electric load from daytime to night when electricity is more plentiful, less expensive and generated more efficiently. The plan also called for replacing three of the building's aging chillers with new, more efficient and more reliable non-CFC chillers.

### Results

This turnkey project shifted nearly 1 megawatt of peak electric demand and reduced annual on-peak energy usage by more than 2.15 million kWh. Trane installed three 800-ton CenTraVac™ chillers, 64 CALMAC thermal storage tanks and related thermal storage equipment.

The thermal storage system uses one of the new chillers to make ice at night during off-peak, reduced-rate hours—reducing peak electric demand by nearly one megawatt and reducing on-peak energy consumption by over 2.15 million kWh per year. These energy savings, combined with a substantial subsidy incentive from NYSERDA, delivered an attractive financial return for Credit Suisse while enhancing chilled water plant resiliency. Off-peak power used to make ice is generated by more efficient, cleaner natural gas power plants rather than older, dirtier oil-fired plants, providing a distinct environmental advantage. The new chillers also use environmentally responsible HCFC-123 refrigerant. All work was completed without disrupting operations of Credit Suisse or other building tenants.



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