

Multi-residential building reduces electricity consumption by 42% in less than 6 months

CASE STUDY



A UAE private
real estate company

BUILDING OVERVIEW

LOCATION
DUBAI, UAE

CONTROL SYSTEM
SAUTER CONTROLS

TOTAL CONTROLLED SQ. FT.
218,000

HVAC EQUIPMENT CONTROLLED
AIR HANDLING UNITS (AHUS) & FAN COIL UNITS (FCUS)

CONTEXT

Why a multi-residential tower is implementing AI

Meera Tower is a 52-storey multi-residential building located in Al Habtoor City, Dubai. The building experiences an arid desert climate with high humidity levels due to the increased bodies of water in the region. Al Habtoor Real Estate is one of the largest companies in the United Arab Emirates. The firm was looking for a solution that would reduce both district cooling and electricity consumption in its building.

PROCESS

AI integration in a 52-storey multi-residential building

With two seasons, high humidity levels, and an arid desert climate, HVAC systems are in high usage across Dubai. Removing humidity from spaces requires extensive electricity consumption. BrainBox AI connected to the building's Sauter control system via BACnet. Upon connection the team normalized the existing internal data points and mapped Meera Tower's common areas spanning **218,000 sq.ft.**

This integration allowed the AI-engine to learn the thermal behaviors of each zone, identifying patterns in consumption throughout the days and months. Once accomplished, the dataset was enriched with external elements such as weather predictions, making the HVAC system pre-emptive. This process enabled Meera Tower to accomplish significant results.

RESULTS

Rapid results in 4 months

In just four months, Meera Tower was able to achieve impressive savings, reducing HVAC electricity consumption by **42.7%** (representing 128,999 kWh of electricity use). District cooling is also used in this multi-residential building to help with the cooling needs in this hot climate. BrainBox AI was able to reduce district cooling consumption on controlled equipment by **24%** (equating to 25,205 Ton-hr). These results were driven by autonomous modulation of 139 pieces of HVAC equipment, at a continuous 5-minute frequency.

With the firm's main goal to lower the multi-residential building's electricity usage, its choice to implement BrainBox AI has helped meet this need. These energy savings are equivalent to a **37.9%** (a total of 62.31 tCO₂eq) reduction in carbon emissions, unlocking further value for the real estate company. The autonomous technology helped the real estate firm recognize savings in Meera Tower, while further improving tenant comfort and increasing the HVAC equipment's useful service life.

Meera Tower's success story is evidence that untapped potential can be unlocked through the power of artificial intelligence for the built environment. At BrainBox AI, we are proud to have helped the client meet their building needs.



-37.9%

Carbon emissions equivalent reduction



-42.3%

Electricity savings on controlled HVAC equipment



-24%

District cooling savings on controlled HVAC equipment

Interested in learning more?
[Click here](#) for more of our case studies

BRAINBOX AI®