



# CASE STUDY

## Kurogane Kosakusho



## Kurogane Kosakusho Ltd installs Climate Wizard in their Kyoto Factory

KUROGANE KOSAKUSHO LTD IS ONE OF JAPAN'S LEADING MANUFACTURERS OF OFFICE FURNITURE AND ACCESSORIES, WITH A SUBSTANTIAL FACTORY LOCATED IN THE HILLS NEAR THE CITY OF KYOTO.

The multi-story facility, housing process machinery and assembly lines, was air conditioned with a number of packaged air conditioners (PACs) which maintained the working area at around 25°C (77°F).

The earthquake and tsunami of March 2011, which resulted in the shutdown of most of Japan's nuclear generating capacity, had the flow on effect of a requirement to reduce industry energy use, including that used for air conditioning.

Kurogane Kosakusho chose to install Climate Wizard to provide half their factory cooling requirements, allowing

them to switch off half of the PACs and make operational energy savings of around 37% over the summer period.

As part of the evaluation process, Kurogane Kosakusho's President and senior managers visited the Seeley International head office and factory to learn firsthand about Climate Wizard and how it could be properly applied to their air conditioning system. The Seeley International engineers worked with Kurogane to design a retro-fit installation that provided staged cooling using Climate Wizard as the first stage. The PACs that were to be retained on line, then operate to provide the additional cooling when needed.

An added advantage of using Climate Wizard was the provision of outside air to the workplace, which in itself improved the comfort of the staff.

The installation presented some challenges due to the compact nature of the site and the fact that the main facility was on the second floor of an existing building that had been in use for quite some time.

The innovative use of raised platforms and well insulated ducting allowed all of the Climate Wizards to supply air through existing wall penetrations and adjacent to where the decommissioned PACs were located.

While in some cases the ducting was of a considerable length, the supply pressure capabilities of Climate Wizard ensured that the full specified air flow was available.

The installation was commissioned by Kurogane and Seeley Engineers and in doing so, the Climate Wizard wall control temperatures were set a few degrees below those of the remaining PACs.



Testing confirmed the planned two stage operation was achieved, even though the individual control systems were not connected in any way. Managing the installation in this way eliminated the need for complex PLC controls with multiple sensors and kept the installation cost to a minimum.



## Project information

Installation	Original	New
System	4 x 45kW PAC	2 x 45 kW PAC + 5 x CW-H15
Cooling Capacity	180kW	160kW
Input Power	69.2kW	43.6
COP	2.6	3.7
Energy Saving	-	37%

\*At project design condition

## Benefits

- ✓ ECONOMICAL SOLUTION TO SEVERE POWER RESTRICTION
- ✓ 37% ENERGY SAVING OVER THE SUMMER MONTHS
- ✓ LOW MAINTENANCE COSTS AND LONG LIFE EQUIPMENT
- ✓ RETRO-FIT INSTALLATION, SUPPLEMENTARY COOLING TO EXISTING PACS
- ✓ ENHANCED COMMITMENT TO THE ENVIRONMENT



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