IMPROVING MAINTENANCE EFFICIENCY AT THE VANCOUVER INTERNATIONAL AIRPORT

LOCATION

The Vancouver International Airport (YVR) is the second busiest airport in Canada with 20.3 million passengers in 2015. Winner of Skytrax Best North American Airport and one of the top 10 airports in the world, the airport’s facility managers are very particular about maintenance activities.

Our Challenge

One area sensitive to maintenance requirements is the executive office area in the Link Building, where Direct Digital Controls (DDC) contractor ESC Automation was challenged with scheduling maintenance on the four air handlers and 120 zone devices (Variable Air Volume (VAV) boxes and Fan Control Units (FCUs)). The equipment DDC maintenance had previously been performed with physical verification of all the controllers, thermostats, valves and other control devices. Securing access to many of the offices had proven difficult. The equipment in the ceiling spaces are often located above desks or other obstacles. The disruption to office occupants and the inconvenience of cleanup of any debris from removing and replacing ceiling tiles was an issue for the client and a challenge for ESC.

Kaizen Benefits

$5200
In yearly labour savings

Over 100 hours
of equipment checks reduced to a single shift (8 hours)

98% increase
in zone performance target from 86%
THE SOLUTION

Switching from a schedule-based preventive maintenance approach to a proactive, condition-based approach, ESC chose to implement CopperTree’s Kaizen analytics. Taking advantage of its flexible Key Performance Indicator (KPI) report, ESC applied the report to all of the zone units. The KPI report provides a daily, weekly or monthly report of the best and worst performing units, eliminating the need to access units for the sole purpose of visual inspection.

The report allows ESC to focus exclusively on those units in need of repair while allowing them to direct the hours saved toward other areas of concern to the client. Further, by identifying issues before they become major problems, Kaizen gives ESC the time to plan and schedule repairs at a time more suitable to the client. Repairs are typically completed before the client is aware of the problem or occupants become uncomfortable.

Perhaps the most significant benefit to ESC and the client is the time saved: over 100 hours of equipment checks is reduced to a single shift (8 hours).

FINAL RESULTS

Using Kaizen’s Fault Detection and Diagnostics, ESC has been able to save time normally spent inspecting controls and equipment and refocus that time on other areas of concern. The inspection savings for the client is about $5,200 per year, but that’s only part of the benefit. Usually the inspection budget is constrained, so not all equipment is inspected at the same time. Kaizen monitors all of the equipment all of the time, so ESC and the client know exactly what equipment is in need of maintenance and repair.

ESC’s Graham McNeill says, “Kaizen has proven to be a valuable tool to perform quality DDC maintenance services while minimizing the impact for our client and allowing our resources to focus on the problem areas.”

THE BENEFITS

Occupants in the offices are no longer disturbed by unnecessary equipment inspections, the client is getting more equipment repaired for its budget and ESC is providing quality services to the same high standard.

The KPI Report has also led to better performance of the zone equipment. Since implementing the KPI Report, zone performance has gone from 86% of the zone equipment meeting the performance target to 98%.

KAIZEN FOR TODAY AND THE FUTURE

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