

GRAND WINDSOR HOTEL

AUCKLAND, NEW ZEALAND

CASE STUDY

PROJECT DESCRIPTION

Built in 1928, the Grand Windsor Hotel is considered an art-deco jewel of New Zealand. The boutique, 5-star hotel, located in the Heart of Auckland's Queen Street was known as Auckland's first skyscraper. The heritage listed, 10 story building incorporates a blend of classic and art-deco design throughout both its elegant interior and exterior.

PROJECT REQUIREMENTS & CHALLENGES

As part of a meticulous and extensive multi-million dollar upgrade, the hotel required a high-quality heating and cooling solution that was reflective of the hotel's 5 star design and could reliably deliver even air distribution throughout its 79 exquisitely appointed guest rooms, restaurants, corridors, lobbies and other common areas, ensuring the comfort of all guests and staff, all year round.

Given the age and layout of the building, as well as the hotel's construction schedule, the project posed a number of design and installation challenges. With the building heritage listed, minimal modifications to the structural design could be made meaning the chosen solution would need to be retro-fitted within the building's existing ceilings and bulkheads, some of which are over 50 years old. The solution would also need to cater to each room's individual needs by being able to deliver heating and cooling simultaneously while giving hotel management and maintenance personnel the ability to monitor all systems remotely. Both indoor and outdoor units would also need to produce minimal noise to ensure all hotel guests comfort during their stay. To minimise the hotel's downtime, all systems would also need to be installed within a tight time-frame.

MHIAA'S SOLUTION

After taking into consideration the building's existing structural components, the layout, air flow requirements for each individual room, corridor and common area and working closely with contractors All Kool NZ to compare all viable solutions, a system design which incorporated a mixture of MHIAA low-profile ducted systems, split systems, coupled with MHIAA's range of high performance, 3-pipe KX VRF systems and FCDA outdoor units was agreed on for the project.

PROJECT DETAILS

Grand Windsor Hotel
Auckland, New Zealand

COMPLETION DATE

August 2017

INDOOR UNITS INSTALLED

2 x FDUM36KXE6 Ducted Systems
5 x FDUT22KXE6 Ducted Systems
67 x FDUT28KXE6 Ducted Systems
2 x SRK25ZMA-S Split Systems
2 x SRK35ZMXA-S Split Systems
2 x SRK50ZMXA-S Split Systems
1 x FDK56KXE6 Split System

OUTDOOR UNITS INSTALLED

7 x FDC280KXRE6 VRF Systems
2 x FDC224KXRE6 VRF Systems
2 x FDCA71VNX Ducted Systems
1 x FDCA125VNX Ducted System
2 x SRC25ZMA-S Split Systems
2 x SRC35ZMXA-S Split Systems
2 x SRC50ZMXA-S Split Systems

TOTAL SYSTEM CAPACITY

289.5kW

CONTRACTOR

Anit - All Kool NZ
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MHIAA'S SOLUTION CONT.

With a height of only 200mm and boasting super quiet operation levels, the FDUT indoor ducted units offered a compact, quiet and discreet solution for spaces that had limited ceiling space available including the luxurious guest rooms, corridors and other common areas of the hotel. Due to their smaller yet efficient design, the FDUT units were easily retrofitted into the tight confines of the existing structure and would deliver even air distribution throughout all areas with ease. A number of larger capacity, FDUM series ducted units were installed in other areas such as the hotel's exquisitely designed lobby.

Both units remain completely concealed within the ceiling and bulkheads with only the outlet air grilles visible. In total 72 of the FDUT and 2 of the FDUM ducted units were installed in the project. To provide individual room temperature control, every room was fitted with an MHIAA touch screen controller, offering full functionality to hotel guests while a SC-SL4-AE network controller was also incorporated into the building's system, providing hotel management and maintenance personnel with remote access, allowing them to closely monitor energy consumption, usage data and turn units on or off if required.

With the ability to provide simultaneous cooling and heating to each of the rooms and an industry leading pipe length, MHIAA's KX series of high performance, 3-pipe, VRF systems, in conjunction with the FDCA series of ducted systems were selected as outdoor units. The KX series' 60m maximum pipe length allowed for a versatile system design and easy connection to majority of the ducted systems while it's efficient design and high CoP meant the KX systems would be efficient to run, delivering cost efficiencies to the hotel owners.

In total, 9 KX VRF systems and 3 of the FDCA ducted systems were installed within the project, achieving a total capacity of 280kW and servicing all the indoor ducted units. Due to their unique design, some of the suites were fitted with MHIAA's range of stylish and efficient single split systems, taking the overall system capacity to 289.5kW.

By working closely with experienced contractors All Kool NZ and the owners of the hotel, C P group, MHIAA was able to deliver a reliable heating and cooling solution that fit perfectly within the existing structure of the unique, heritage listed 5-star hotel and would ensure a comfortable stay for all guests.



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