CASE STUDY

green cooling

PROJECT CASE STUDY:

Ten Trinity Square

Project

This project involved the design and installation of multiple diverse cooling and heating systems at the iconic central London hotel development Ten Trinity Square.

Equipment & Services

- **2 x 100kW Twin Energy GC Multi-Compressor Packaged CO2 Refrigeration Units providing 100% contingency based food service cooling, delivering medium and low temperature supplies to chilled cold rooms and freezers**
- **14 x High specification cold room refrigeration systems, delivered via 28 x high efficiency cold room evaporators (twin units per cold room delivering 100% contingency)**
- **1 x Monitoring system with leak detection throughout, providing both local and web based visibility of all the refrigerated elements of the project. This system provides operational control and remote access, assisting the operator in achieving optimal performance.**
- **1 x 4,000 litre GC Thermal Hub, Refrigeration Waste Heat Recycling System, providing pool & spa heating**
- **1 x 50kW GC CO2 Secondary Water/Glycol Chiller providing front of house display refrigeration**
- **1 x GC Wine Wall Feature Display with 5C to 18C individual temperature control across four separate compartments/zones to enable champagne, white and red wine to be presented**
- **2 x 12mm Nuheat Low Profile Pex Underfloor Heating Systems to provide floor warming to the Pool surround areas**
- **1 x 20mm Rehau Pex Multi Zone Low Temperature Floor Cooling System to the Sauna area**
- **2 x 50kW Stulz Computer Room Air-Conditioning (CRAC) Units providing 100% contingency based cooling to the hotels data room**
- **12 x Mitsubishi/Daikin VRF/Air-Conditioning Systems ranging from 10kW to 35kW throughout various critical areas**
- **2 x 15kW GC CO2 Air-Conditioning Systems, maintaining 12C within the residents' club/wine store area**

Application

Ardmore Construction was the projects main contractor, completing and handing over the prestigious Ten Trinity Square in May of 2017.

Having taken the project on a design & build basis from its former use and delivering it as a Five Star Hotel and Spa which incorporates exclusive residences, a Private Members Club and several Signature Restaurants, Ten Trinity Square has become one of London's premier destinations.

Constructed in 1922, Ten Trinity Square was historically the home of the Port of London Authority.

Overlooking Tower Bridge and with sweeping views down the Thames to the East; this iconic building can best be described as one of the most striking structures in London.

During its illustrious past the building hosted the reception for the first meeting of the United Nations in 1946 and took a starring role in the 2012 James Bond film Skyfall.

Hence it is befitting that the building now starts a new lease of life as a high quality destination.

For more information call: 01253 685145 **email:** sales@greencooling.co.uk **visit:** www.greencooling.co.uk

Project Summary

The systems and services within the hotel were designed to provide the highest practical levels of energy efficiency whilst delivering an environmentally focused installation with maximum operational performance and value.

With these objectives in mind the projects Food Service consultant, Gareth Sefton of SHW Design, invited Green Cooling into the project due to their expertise in providing environmentally friendly refrigeration systems and their previous experience working together on similar demanding projects.

In terms of the projects Mechanical Consultants, Green Cooling worked alongside Waterman Group and Qoda in providing specification and system designs for a range of cooling and heating related areas within the project.

Green Cooling provided a combination of design, specification, equipment and installation services to the project across a number of areas:

- **CO2 Refrigeration providing the Food Service medium and low temperature cooling supplies**
- **High specification cold room refrigeration systems and associated ancillaries**
- **Refrigeration waste heat recycling systems**
- **Computer room & IT cooling systems**
- **Air-conditioning to critical switchgear/transformer areas**
- **Air-conditioning within front of house/residential areas**
- **Front of house bespoke wine display systems**
- **Pool heating via recycled waste refrigeration energy**
- **Pool/Spa surround floor warming and sauna floor cooling**

From Green Cooling's perspective the services and equipment provided to this project demonstrated capability across a number of defined areas.

The systems provided include the latest CO2 refrigeration plant supplying critical food service cooling, with the recycled waste heat from refrigeration being used to heat the hotels swimming pools and Spa areas.

Within the kitchen, refrigeration is supplied to fourteen high specification walk-in cold rooms/freezers plus preparation areas.

A CO2 water/glycol chiller provides cooling to front of house wine display units, plus a high specification refrigerated wine wall feature was also designed & provided by Green Cooling within one of the hotels signature restaurants.

Within the Pool & Spa area an under floor system was provided, this delivers pool surround floor warming along with low temperature underfloor cooling to the sauna area.

In terms of the hotels IT and Computer Rooms, high specification Computer Room Air-conditioning units (CRAC units) were provided which supply critical computer/data room cooling.

In addition numerous VRF systems were provided to deliver cooling and heating throughout various areas of the building, from the electrical transformer rooms through to Ten Trinity Squares highest value apartment.

Therefore a very diverse and varied list of requirements were satisfied, all centred around Green Cooling's objective of delivering cooling and heating systems which provide the most efficient levels of performance with the highest levels of operational capability.

Ardmore Group's Construction Director on the Trinity Square project was Steve McGee who comments, 'Ardmore were very pleasantly surprised by the professionalism shown by Garry and David during the preconstruction phase, which proved to be tricky given the challenges of the building. Installation proved to be seamless, as GC kept close to progress onsite and pounced at the opportune time to install their equipment, when the window of opportunity arose', continuing, 'Finally at commissioning stage GC were very efficient, and they really shone when hiccups in the water chiller plant impacted their equipment, by giving immediate remote support, ensuring systems were back online efficiently'.

Reflecting these comments, the Green Cooling in-house design and specification teams provided the project with a complete support service that met the dynamic nature of this fast moving development.

This diligent approach is a fundamental part of the Green Cooling service and as this project demonstrates, this approach enabled value to be added at every stage of the project across several different disciplines.