

Applied Reference

Catalogue / Reference Book



Daikin Applied projects in 2020



Table of contents

Data Centers	4	Offices	22
Data Center facility - FRANCE		Nexi - ITALY	
EWWH-VZ	5	EWWD-VZ	23
		The Senator House - UK	
		EWAH-TZ	24
Industrial Facilities	6	Wellington Place - UK	
Biotechnology Center - FRANCE		EWAD-TZ + D-AHU Professional	25
DWSC + EWWH-VZ	8	Office Blocks - SOUTH AFRICA	
Pharmaceutical Industrial Plant - ITALY		EWAT-B- + EWYT-B-	26
EWWD-VZ	9	Bank office building - UK	
Pharmaceutical Manufacturing Plant - IRELAND		EWAT-B-	27
EWAH-TZ	10	NivAxis Gate Business & Conferences Center - BELGIUM	
Health Supplement Manufacturing facility - AUSTRALIA		Air Handling Units + D-AHU Modular R + VRV	28
EWAD-TZ	11	TKS GmbH - GERMANY	
Medical Industry Project - ITALY		Air to water heat pumps + Split Units + Perfera indoor unit+ ventilation unit + VAM + iTM	30
EWYT-B-	12		
Engelbert Strauss' CI Factory - GERMANY		Tourism & Travel Industry	31
EWAH-TZ	13	Kumasi International Airport - GHANA	
Oil & Gas Industrial Plant - SINGAPORE		EWAD-T	32
EWAD-TZ	14	Hotel - GERMANY	
Oil Refinery - NIGERIA		EWWQ-L- + AHU Professional	33
EWAT-B- + EWAD-T + EWWQ-G	15	Rittergut Störmede Hotel - GERMANY	
		VRV IV heat recovery and pumps + Condenser units + AHU ventilation units	34
Healthcare	16	GHOTEL hotel & living - GERMANY	
Royal College of Surgeons - UK		AHU ventilation units of the D-AHU Modular R + VRV	36
EWYD-4Z + EWAD-TZ	17		
Heatherwood Hospital - UK		Retail	37
EWYD-4Z + Small Chillers	18	Supermarket - ITALY	
Klinikum Mermherzige Brüder - GERMANY		EWYT-B-	38
EWLD-J-	19	Supermarket - GERMANY	
The Dublin Dental University Hospital - IRELAND		D-AHU Modular P + ERQ Condensing unit	39
EWAT-B-	20		
Medical University of Varna - BULGARIA			
D-AHU Professional	21		

Data Centers



Daikin, being a recognized brand

for offering outstanding energy performances, supports data centers' efficient energy use, helping our Digital Transformation become a means for decarbonization.

Data Centers can consume vast amounts of energy. From in-house developed inverter and free cooling technology technologies, to controls and smart solutions improving chillers performance, Daikin offers a wide range of options to help reduce HVAC impact on energy consumption, thus CO₂ emissions. That is extremely important in a world that has become highly connected and plans to do an even heavier use of digital tools.

Stability, then, is a primary concern for data centers' operators, as a single minute of downtime can cost companies thousands of euros.

Daikin provides failure-proof cooling solutions thanks to stringent quality tests, Rapid Restart feature in case of power failure, and protective coating features ensuring components functionality. On top of that, Daikin on Site offers the perfect platform for Maintenance planning and monitoring of chillers. It allows to collect operational data and schedule maintenance activities, which is key to ensure reliability and avoid units' downtime.

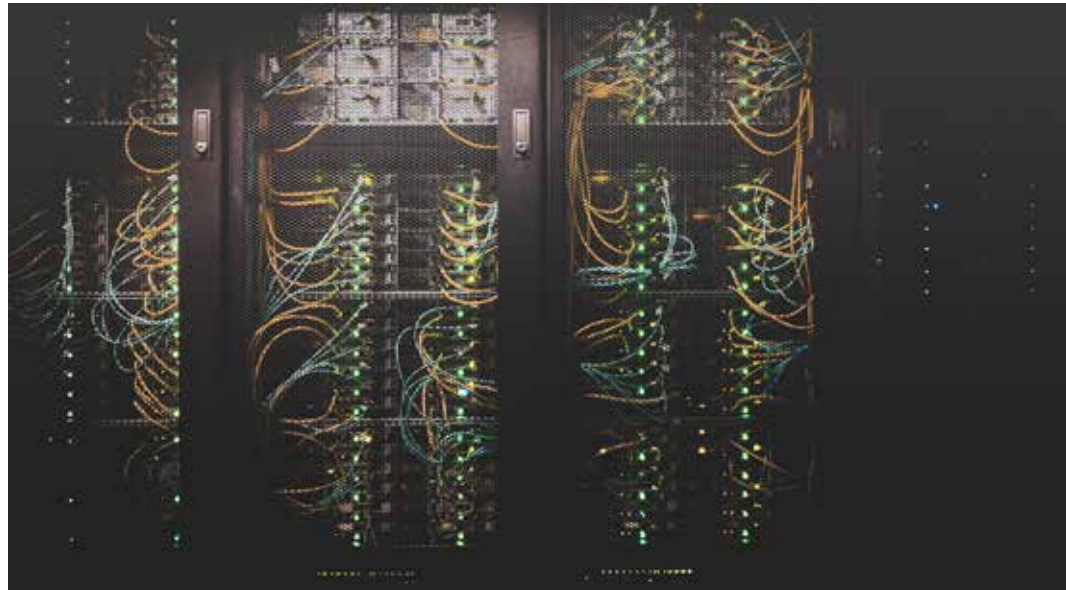


FRANCE

Products installed

6 x EWWH-VZ

Total Cooling Capacity: 8,400 kW



HVAC technology for Data Centers by Daikin

Daikin has recently provided HVAC technology for Data Centers for a project in France, where an important Japanese company working in the international telecommunication sector is reconverting office buildings in a Data Center facility. The project was curated by Daikin France and in particular by Mr Frank Boudin, who directly followed the evolution of the project.



How Daikin can provide valuable solutions for data centers

"The studies for the project started in 2018. It is going to be executed in four phases. Phase 1 will soon see 3 Daikin EWWH-VZ chillers installed, for a total cooling capacity of 4,200 kW. In the final phase of the project, then, they will install three more units of the same range, taking the total cooling capacity at 8,400 kW", said Mr Boudin.

The main project requirements

"The most important requirement for this project was efficiency. Daikin, as a leader in the sector, managed to win the project with the incredible efficiency offered by the VZ range.

Among the most interesting options for this project there is the Rapid Restart, which is fundamental for Data Centers. In fact, the rapid restart is an option that can help preventing the increase of temperature in case of power interruption. It helps helping bringing the chillers back to full load capacity in no more than 180 seconds. As far as redundancy, that is an aspect that has been taken care when the HVAC system has been designed. The data center will essentially use five of the six chillers installed and have the sixth as a redundancy in case one of the other units failed or had to be maintained.

Another interesting aspect of the project is that, other than making a stock of spares available as a back-up, Daikin will manage the whole chiller plant. Hence, all the equipment, from the chillers to the dry cooler and the pumps, will be controlled by Daikin. Basically, we will make sure the whole system will be working as efficiently as possible. Daikin will also have to make sure to effectively use the dry cooler free cooling mode when possible to take advantage of favourable outside temperature".





Industrial facilities

High energy efficiency and reliability is what Daikin offers for all kinds of industrial facilities

Industrial facilities deserve maximum performance and the lowest possible energy consumption levels, but also extreme reliability. This is where Daikin entirely in-house developed screw compressor technology makes the difference, ensuring high efficiency and durability.

For even better efficiency levels, then, Daikin's refrigerant cooled inverter technology can really take a HVAC system to a whole new level, thanks to the very high efficiency levels guaranteed, both at full and partial loads.

All Daikin products are thoroughly tested during the whole production process, to ensure reliability of the units and the success of HVAC projects.

Inverter Screw + Centrifugal



Products installed

1 x DWSC
3 x EWWH-VZ

Total Cooling Capacity: 6,500 kW

Great efficiency for the Pharma and Biotech sector

In this project, Daikin provided a solution integrating both centrifugal and inverter screw chillers, to meet the energy efficiency, the cooling and the heating needs of a very important Biotechnology Center in France.

The project in details

The above-mentioned facility offers entire laboratories to all those companies working in the pharma and biotechnology industry and that need adequate spaces to conduct their researches and test.

The HVAC project has required the refurbishment of a plant which was getting too expensive for the companies to maintain. The old installation was using three Sorption units for a total of 1.6 MW, but it was consuming large amounts of energy and gas, which was definitely not ideal in terms of expenses. That is where Daikin came in.

Daikin solution

The goal for this project was definitely making the HVAC system more energy efficient than the old one. For this reason, an energy analysis was made, and that allowed Daikin to come up with the best possible solution in terms of efficiency, reliability and effectiveness as far as the cooling and heating needs the facility has.

The new HVAC system now used one 2 MW centrifugal chiller from the DWSC Series and two Water-Cooled Inverter Screw chillers. Those units, other than meeting the cooling needs of the building and offering great reliability, offer great efficiency levels, thanks to the Refrigerant-Cooled Inverter technology, used both on the centrifugal and the inverter screw compressors.

And then, the installation was completed with a Screw Inverter Heat Pump from the VZ Series, to satisfy good part of the heating needs of the facility during winter and save gas from the 1.6 MW boilers completing the HVAC system.

With this solution, Daikin was able to reach very high efficiency levels and great reliability, also thanks to the level of redundancy that system offers. All of those aspects gave the customers great confidence in the solution offered by Daikin – confidence that was also backed by the quality associated with the brand.





Products installed

1 x EWWD-VZ

Total cooling capacity: 1MW



Meeting stringent requirements for the pharmaceutical sector

The pharmaceutical sector often has stringent temperature and humidity control standards when it comes to choosing the right HVAC equipment. That is the kind of challenge Daikin managed to overcome in the “Pharmaceutical Chiller 5” project.

Feedback from the field

The project involved a pharmaceutical industrial plant based in Italy. The plant operates on 3 shifts (at full capacity), only stopping manufacturing activities on Saturday afternoon and Sundays.

For this project we had the chance to talk with Lorenzo Merluzzi, CEO and Technical Manager at Vaportermica Commerciale S.r.l., who directly followed the project. He took care of all the technical and commercial aspects, from the initial contact with the customer, to the definition of the needs and the technical-commercial proposal.

Here is what he said about the project: “The pharmaceutical plant is located in Udine, Italy. The plant is dedicated to the production and packaging of cosmetics and pharmaceutical products. Pretty much the whole facility has stringent temperature and humidity control requirements, that are needed to be able to carry out manufacturing activities. That is why the plant needed cold process water at temperatures just above 0 °C. The company was already using Daikin chiller

units. In particular three Daikin EWWD-I- and a Daikin EWWD-J- chiller, all water-cooled featuring R-134a refrigerant, were already installed and connected to a cooling tower. The plant is soon expected to increase the workload, and for this reason they have decided to proceed with the expansion of the HVAC plant adding a fifth chiller. They needed a unit able to provide about 1MW of cooling capacity with water temperatures between 0 and 5 °C. And most importantly they needed a reliable unit providing the highest possible efficiency levels.

For this reason, we chose the Daikin water-cooled chiller EWWD-VZ with R-134a refrigerant in the Gold version, which guarantees really high efficiency levels, also thanks to the integrated Inverter technology. The chiller, then, has been connected to a plant monitoring tool for a centralized and optimized management of the entire refrigeration plant”.



Inverter Screw



Products installed

1 x EWAH-TZ



An efficient chiller for a pharmaceutical company

An efficient chiller for a pharmaceutical company is what Daikin has recently provided with its low GWP Single Inverter Screw TZ series. The chiller has been recently commissioned for a recently executed project involving a large pharmaceutical firm in Cork – Ireland.

Low GWP and sustainability

Choosing the TZ series, the industrial HVAC specialist Brian A. Flynn Ltd. has supplied a single inverter screw chiller with HFO refrigerant.

This means both the end user and the installer were looking for a sustainable and future-proof solution, that could be a real alternative to technology using R-134a refrigerant. R-1234ze refrigerant, in fact, stands out for having a very low GWP (7 vs 1.300 of the R134a), and also for ensuring very efficient chiller operations. These two aspects definitely make this refrigerant a future-proof choice. Especially if we consider the more and more stringent environmental regulations we have in Europe.

The importance of inverter technology

The units provided for this project also benefit from Daikin refrigerant cooled Variable Frequency Drive (VFD). An electronic power component that, by varying the frequency of the motor power supply, modulates the compressor rotational speed (RPM) and in such a way controls the compressor capacity.

Since chillers usually spend most of their operating time at part load conditions, this technology is fundamental to help chillers perform as efficiently as possible. Even at part load conditions.





AUSTRALIA

Products installed

1 x EWAD-TZ

Total cooling capacity: 540 kW



Daikin plug & play solutions for industrial applications

One of Daikin plug & play solutions was recently involved in the replacement of an aged chiller that was no longer reliable enough to support production at a health supplement manufacturing facility in Brisbane, Australia.



Project background

Daikin's EWAD-TZ plug & play feature, plus the professionalism of the installing mechanical contractor Advanced Air Conditioning, allowed to quickly swap the old chiller with the new Daikin air-cooled chiller ensuring production was not compromised. Here is what Mr. Kamal Hewa, Sales Manager for Daikin Australia, told us about the Metagenics project:

We looked at the potential upfront costs along with the cost of running this new machine. This new machine also had three years extended warranty along with a service contract to provide the end customer with confidence in the Daikin product and service."

Reliability, efficiency and quick commissioning

"The project required the delivery and replacement of the existing machine to happen over a weekend so not to disrupt manufacturing and the office staff. This was an important part of the project that the installing mechanical contractor managed like clockwork. Daikin's commissioning technician worked through the weekend to ensure the machine was ready for Monday's start. The end customer was clearly looking for reliability and energy efficiency. Those were the drivers of the choice they made replacing the old chiller unit with a new one".



"The end client was a company called Metagenics. Metagenics is a manufacturer of natural medicines and has a plant in Brisbane. The building is three stories' high. And the chiller we provided will serve their factory along with their offices."

Main project needs and requirements

"The chiller we had to replace was an old fixed speed machine needing repairs. We did an analysis to compare the cost of repairing versus the cost of replacing, along with the benefits of having a new more efficient machine.

Eventually, they decided to replace the old fixed speed air cooled screw machine, which was also having reliability issues.



Products installed

1 x EWYT-B- air to water heat pump with scroll compressor and R-32 refrigerant

Providing a reliable and efficient solution for the medical sector

In this project Daikin offered a reliable and energy efficient solution for a refurbishment project involving a company working in the medical sector.

Feedback from the field

Here is what Eucos – the company managing the refurbishing of the HVAC system – told us about this project.

"We are an Italian company specialized in the installation and maintenance of HVAC systems since 1903, for over a century we have been specialized in the sectors of industry and public administration with our own staff and all the certifications required by our sector. In this project we worked for a leading company in the laboratory diagnostics market in the fields of hematology, microbiology, serology and autoimmunity. They produce clinical diagnostic equipment for the analysis of the Speed of Erythro sedimentation and Rapid Bacterial Culture, and they work in 100 countries around the world, also collaborate with several Italian universities.

For a few years the heat pump serving the offices and the production plant of this client, had repeated breakdowns, impacting production processes and forcing them to face expensive repairs. As maintenance and plant managers for this client we have come up with a project aiming at refurbishing of the HVAC system serving the plant with an eye on energy efficiency".

More into details

"The system serving the facility requires the presence of a heat pump providing cooling/heating all year round, through air handling units, fan coils and radiant floor panels for heating. For this project we chose a Daikin R-32 heat pump EWYT-B-, as the best technological product at the top of its class. Since this client works in the medical sector, the main milestone was to ensure an energy efficient, reliable and redundant plant. Those are common requirements for this kind of clients.

Also, the heat pump is equipped with a heat recovery system, which in the summer sends part of the condensation heat to the hydronic circuit serving the post heating batteries in the various Air Handling Units in the plant".





GERMANY

Products installed

5 x EWAH-TZ

Total Cooling capacity: 3,450 kW



An environmentally friendly HVAC solution for Engelbert Strauss' CI Factory

Engelbert Strauss needed an environmentally friendly HVAC solution and chose Daikin technologies to provide its CI Factory with both cooling and air conditioning.

The gigantic production site of the well-known manufacturer of professional clothing, footwear and accessories in Schlüchtern, near Frankfurt am Main. The factory was built from scratch in 2017 and completed in 2019 and has an area of 90.000 m². Almost 55.000 m² needed air conditioning. That equates to almost eight football pitches. In order to meet the customer requirements for temperature control, comfort, and energy-efficient operations, five Daikin chillers for a total nominal capacity of 3,450 kW were installed. All of them featured the environmentally friendly refrigerant R-1234ze, which has a particularly low global warming potential (GWP value of 7).

The CI Factory – built according to the Energy Saving Ordinance EnEV 2014/2017 – is the new state-of-the-art production site of the family-owned company, which manufactures work clothes and shoes for commercial customers in more than 30 countries.

Main goal – sustainability

Engelbert Strauss set the highest standards of innovation not only with its products, but also in the Factory in terms of temperature control and environmental sustainability. On the roof of the logistics center there is a photovoltaic system with a nominal output of 800 kWp, which corresponds to the energy requirements of 200 households. Cooling and air conditioning systems, then, had to be designed respecting the same principles of sustainability. That is why Engelbert Strauss chose Daikin. Burkhard Taus, Managing Director at the construction company STAR Kälte GmbH said "Daikin offers great products and we have developed a close relationship with them. The high quality of the systems combined with the reliability and expertise of Daikin's employees are two of the main reasons why we decided to work with Daikin as a partner in this project."

The advantage of using R-1234ze

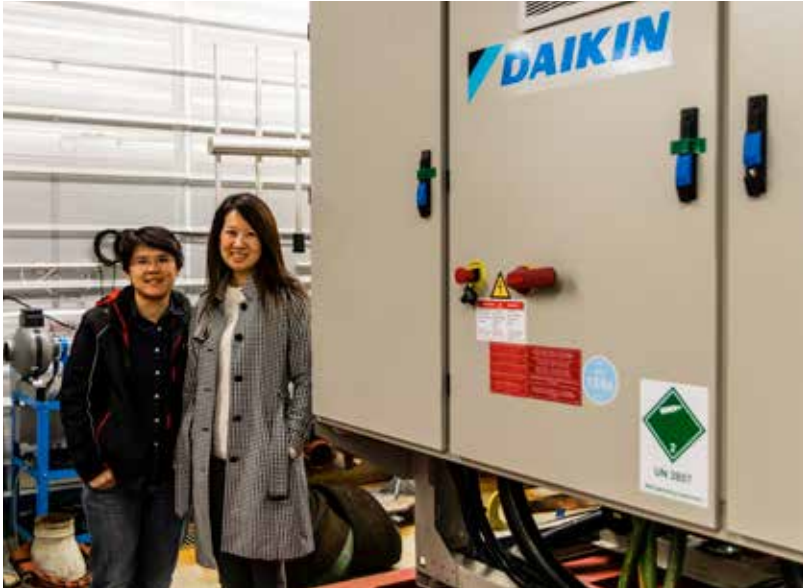
The project required an environmentally friendly HVAC concept. That is why it was decided to use chillers featuring the new HFO refrigerant R-1234ze. This refrigerant sets the new standard for environmentally friendly cooling systems. With a GWP (Global

Warming Potential) 200 times lower than R-134A, it is much greener option, and paired up with Daikin's Single Screw compressors technology also ensures great energy efficiency levels.

An efficient cooling system

On the roof of the CI Factory there is not only the above-mentioned photovoltaic system. The roof also accommodates four Daikin air-cooled chillers arranged in a cascade system, each of them is providing 820 kW of cooling capacity, which ensure efficient air conditioning to the logistics and the production processes areas. The arrangement of the four EWAH-TZ chillers using the cascade principle, allows to control the system and activate all or just a part of the chillers in the plant, based on the actual cooling need of the building.

The chiller plant, then, also uses an air-cooled chiller EWAH-TZ providing 170 kW of cooling capacity. This one ensures cooling to the server rooms in the factory. These relatively compact chillers require little space and offer maximum reliability and flexibility for a process cooling system. The modern Single Screw Compressor with inverter, then, allows low-noise operations – also thanks to the fan design – and exceptionally high efficiency levels.



SINGAPORE

Products installed

4 x EWAD-TZ

Total cooling Capacity: 3,300 kW

Compliance with regulation in industrial plants

Compliance with regulations was the most important aspect for NESTE project. We met Ms. Thong Lee Ying, HVAC Contractor from Amcrotech Pte Ltd, Ms. Elaine Soong, M&E Consultant from W2Square Consultancy Pte Ltd, and Mr. Sam Chen, Main contractor from Sumitomo Mitsui Construction Co Ltd. They were all working on this industrial project for a company in the Oil & Gas sector, in Singapore.

How Daikin provided value for the project

"It is an industrial project in Singapore, which involves 10 buildings and an industrial plant. It is split in two packages. One of them will involve a number of office buildings and an electric substation, which will serve the oil & gas plant. The second package, then, will provide cooling for the actual plant. These four chillers will be used for office buildings and for the electrical substation. The total cooling capacity for this first phase of the project is 3.300 kW. However, for the whole project we will install 10 Daikin chillers in total.

The key driver for Daikin as a choice

The key driver for our choice was compliance with regulations. Hence, efficiency. The overall plant efficiency will have to respect the rules imposed by the building and construction authority of Singapore (BCA). It is an organism regulating the efficiency of the equipment used in the buildings. Because of that we really focused on meeting these efficiency targets. Daikin was able to provide really high efficiency values with its TZ series. As a result of that, we chose Daikin. [...] We have had other experiences with Daikin throughout our careers. it is an established brand. Their support is good, and that is very important for us. That is another reason why we directed our chose this brand".





NIGERIA

Products installed

8 x EWAT-B-
2 x EWAD-T
10 x EWWQ-G-



Daikin flexibility and reliability for Oil Refineries

Oil Refineries are demanding applications that definitely require reliability, but also flexibility as those are often big projects including a variety of buildings. The following project offers evidence of this.



Project background

Here is what Mr. Ahmed Majed, Building Services Mechanical Engineer at VACC, told us HVAC project he has worked on – the phase one of a project, which involves the biggest Oil Refinery in Nigeria.

Also, the site is quite close to the sea, so we also had the units treated with blue coating as an anti-corrosive. The factory test then, was another important requirement for the project, as it was necessary to prove the quality and the performance of the chillers."

Main project needs and requirements

"The one we are currently working on is the biggest Oil Refinery in Nigeria and I'm the project manager for the HVAC project.

For this first phase of the project we have chosen both scroll and screw air-cooled units plus, water-cooled scroll units. It is an Oil refinery built from scratch. In this case, the HVAC system will be required to cover the cooling needs of a variety of buildings, including offices and electrical substations. For this reason, we have chosen different units to cover a wide variety of needs.

As per our procedure we went through a list of potential HVAC manufacturers and finally we came to conclusion that Daikin was the right choice for this project.

Efficiency was clearly important, but one of the real concerns for this project was water quality, as the quality of the water we have on site is different than the standard. For this reason, we had to request some modifications to the heat exchangers, using stainless steel instead of copper.

The flexibility of Daikin portfolio

One of the most interesting aspects for this project was definitely Daikin's ability to provide a wide range of solutions, covering the needs of the many different buildings in the project – from offices to electrical substations. That was possible thanks to the wide range of solutions Daikin product portfolio can offer, even for the most sensible applications like Oil & Gas facilities.



Healthcare



Daikin perfectly knows

how to meet the needs of critical applications
like hospitals and medical facilities

Whether it is surgical rooms, over-crowded emergency rooms, laboratories and MRI rooms where equipment needs to stay cool, Daikin ensures perfect temperature control, energy efficiency and outstanding air-quality.

Medical facilities often require both heating and cooling in different parts of the building. Our multipurpose range can meet the need for hot water and chilled water at the same time. And if there's a group of chillers to manage, Daikin smart control solutions can optimize the way chillers operate increasing their efficiency.

Maintenance planning and monitoring of your chillers or Air Handling Units, then, is another key aspect to ensure the durability and reliability of the HVAC plant. Daikin on Site is the perfect tool for that. It allows to collect operational data and schedule maintenance activities, avoiding units' downtime.



Products installed

1 x EWYD-4Z
2 x EWAD-TZ

Total Cooling Capacity: 1,630 kW
Total Heating Capacity: 358 kW

Future-proof HVAC technology for the Royal College of Surgeons

Future-proof HVAC technology is what the Royal College of Surgeons of England was looking for for this project. The Royal College of Surgeons of England is a professional membership organisation supporting over 25,000 members in the UK and internationally, by improving their skills and knowledge. Its aim is facilitating research and developing policy and guidance in patient care.

The Royal College of Surgeons of England project

John O'Riordan, Head of Building in the estates of Royal College of Surgeons of England, and Stuart McGillivray, who works for Wates Construction on the building services across all of their projects in London, shared this information on the project:

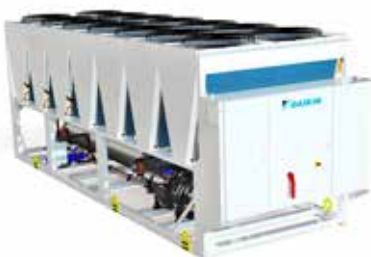
"Our site in Central London is going to be a blend of the old and the new. The building is 200 years old for the most part. It is a Georgian listed building, but large sections of it were rebuilt following world war two. The building was not very efficient. So, they decided to demolish the post-war structure, retain the listed structure and join the old with the new to create a flexible and efficient workspace to allow surgeons to carry out their trainings. So, the goal is to support the Royal College of Surgeons aims and agenda. Our primary aim is advancing the standards of the building. In this sense, it is very important to us to come to a test facility that has the ability to meet a very high standard of testing".

"It is important for us to ensure confidence in the performance in the equipment we bought. This facility and the test we are doing just takes the worry away. Because we can

have confidence in the equipment and if there is any problem during the commissioning period and the hand-over period we know it is not an equipment issue, and we can narrow our search down".

Future-proof HVAC technology

"It was important for us to be convinced that the technology we are buying is best in class. That it is meeting the specifications, but it also has a degree of future-proofing. We think that the advanced features on the Daikin we can satisfy those criteria. It is the connectivity of the machine, the controllability of the machine. The data we are seeing during the witness test are giving us confidence that we can perfectly integrate the machine in our Building Management System (BMS), that we will be able to monitor, verify the performance and improve it. That is very important to us. [...] Also, we were very interested in working with a hybrid system for this project. Using Daikin multipurpose unit EWYD-4Z to both provide cooling and heating will give us better building efficiency and occupancy satisfaction".





UK

Products installed

2 x EWYD-4Z
2 x Small Chillers

Total Cooling Capacity: 960 kW
Total Heating Capacity: 1,040 kW

A multipurpose chiller for a hospital

A multipurpose chiller for a hospital can be a very good choice. Mr Leon Magill, Mechanical Engineer, and Mr Jeremy Reynolds, M&E Project Manager, both from Kier Construction, worked on the Heatherwood Hospital, an NHS hospital in Ascot, Berkshire (UK).

Daikin multipurpose chiller for Heatherwood Hospital

They said about the project, "the Heatherwood Hospital is a 4 floors medical facility. It has 48 inpatient beds and facilities for 22 day cases, 6 operation theaters, X-ray and MRI department, an outpatient department and endoscopy. It is roughly 10.000 sqm big.

The multipurpose chiller will provide cooling, heating and sanitary hot water. It will provide cooling to the operating theaters, where there is a quite significant heat gain from equipment. It will also provide cooling to server rooms and for the fan coil units in the rooms. We will use, then, the two 70 kW small chillers in stand-by for the MRI.

Project main aspects

"Efficiency was a very important aspect, because we had to comply with building regulations. Compactness, then, is important as well. We have got very tight plant space for the chillers, therefore we needed to get that output with the smallest possible chiller".

Clients' experience with Daikin

"It is our first experience with Daikin and we are very satisfied. Everybody has been very supportive. Daikin helped us a lot with saving space. They have also helped saving time with the project. They are providing a good service. Also, they explained the witnessed performance test very well and the testing facility is very good".





GERMANY

Products installed

4 x EWLD-J-

Total cooling capacity: 1.2 MW



A Reliable cooling solution for a hospital

Probably there is no application where reliability is as vital as it is in hospitals, where HVAC systems have to ensure cooling and/or heating 24 hours per day. At the Klinikum Mermherzige Brüder Regensburg Hospital, absolute reliability is ensured by a total of four Daikin condenserless chillers, which are providing cooling to operating room, equipments and technical rooms.

Project details

The Klinikum Mermherzige Brüder in Regensburg – with 955 beds – is among the largest hospitals in Germany. About 48,000 is the number of patients the hospital deals with on a daily basis. The hospital had to replace 2 old chillers in the HVAC plant and decided to use Daikin again, as they already replaced other 2 chillers in 2002.

The two new Daikin condenserless chillers, together with the others installed in 2002, now provide cooling to operating rooms, equipment and radiological devices such as MRI or CT, but also laboratories. The compact footprint of the J Series by Daikin was a godsend, as the units had to be installed indoor and the technical room did not offer much space.

The air-cooled condensers, instead, are installed separately on the roof of the hospital. "The space-saving aspect and the separate installation are another plus for the hospital," says Holger Kempf, Managing Director of

Kempf Refrigeration & Air Conditioning from Regensburg, who has followed the project from the start. "This installation proves how Daikin can easily integrate and connect to existing systems, also communicating with no problem whatsoever with the building management systems."

Convinced by quality

"We have been working with Daikin chillers for a long time now, and we are very satisfied with the technology. Personally, I was very pleased to know Daikin was chosen again. The installation was perfect, also because the plant infrastructure was already in place," emphasizes Johann Rist, Deputy Head of Operations Technology at the hospital. In this project, efficiency was among the main requirements Daikin had to satisfy, and the very high efficiency levels of the units installed definitely met the efficiency needs of the client.



IRELAND

Products installed

1 x EWAT-B-



A R-32 chiller for hospital HVAC systems

Daikin R-32 chiller is a great option for hospitals' HVAC systems. Here is another example of how this range can meet the need of medical facilities.

In this project Daikin replaced an old Screw chiller which was having issues. The building is a medical facility, most specifically The Dublin Dental University Hospital on Trinity College's Campus. The project was followed by Mr Ciaran McCarthy from Daikin Ireland and Mr Stephen McEneaney, Contracts Manager at Reconair Services Ltd., which is currently the incumbent maintenance/service provider for the University Hospital.

Project background

Mr Stephen McEneaney said about this project: "The Chiller was supplied to replace an old Screw machine which has had numerous issues over its recent lifetime. It is supplying 3 air handling units which serve Treatment Theatre areas and numerous fan coil units. The Building being served is The Dublin Dental University Hospital on Trinity College's Campus.

The client required an efficient and reliable machine with Low Global Warming Potential (GWP). The consultants for this project have specified Daikin

on numerous projects in Dublin and we felt the Daikin EWAT-B- was the perfect fit. In fact, its features proved very attractive for the client. The only thing that the consultant/client asked of us, is that we propose an efficient and reliable chiller. Chiller was selected by Ciaran McCarthy of Daikin Ireland based on Duty required and Footprint available to meet the project specification".





BULGARIA

Products installed

2 x D-AHU Professional

Total capacity: 10,000 m³/h



Ventilation solutions for medical facilities

Ventilation solutions for medical facilities is one of the many ways Daikin can provide value to its customers. In fact, Daikin has recently provided its HVAC technology in a renovation project that involved the ventilation system for operating rooms at the Medical University of Varna – Faculty of Dental Medicine, in Bulgaria. The project was executed by MMC, one of the first official distributors of Daikin products and solutions in Bulgaria.

Project background

In this renovation project the main aspects consultants had to consider so they could meet the expectations of the client were:

- › need for outstanding indoor air quality
- › thermal comfort
- › need to install equipment which could meet the highest hygiene standards

The Faculty of Dental Medicine is a modern clinical base for the training of students and postgraduate students, aiming at providing them with specialization and qualification courses. Since 2008, the Faculty has a new building for the purposes of theoretical and practical training of students. The center has high-tech and modern equipment and aims to provide opportunities for students to enrich their competences in the field of dental medicine.

This is the context that has set the need for modern HVAC equipment, which could provide the highest standards in Air Conditioning.

Main project needs and requirements

Here is what they told us from MCC about the project: "In the Faculty (Varna) are trained specialists with higher education in dentistry, postgraduates and PhD students in all dental specialties. Since 2008, the Faculty has a new fully equipped building for the purposes of theoretical and practical training of students.

MMC Inc completed the renovation of the ventilation system in four operating rooms in the Faculty of Dental Medicine to the Medical University of Varna. Two Daikin Professional Air Handling Units with a total capacity of 10.000 m³/h were delivered for this purpose – with extra filtration to meet hygiene standards. Thus, an uninterrupted supply of clean and fresh air is created, which greatly improves the medical staff's comfort and the overall working conditions."

How Daikin can provide valuable solutions for medical facilities

This whole project reflects how Daikin can provide valuable solutions for applications like medical facilities, where the HVAC systems need to ensure health, safety and comfort of patients as well as medical and administrative personnel.

Daikin can do that through a wide range of solutions. Among those options, the Air Handling Units portfolio offers highly flexible and customizable solutions that can guarantee the highest indoor air quality, other than ensuring very high efficiency levels and thermal comfort.

In particular, Daikin Air Handling Units are well known for being able to provide the highest level of air filtration, which helps making sure building occupants can breathe the best indoor air.

Offices



Daikin has acquired great experience with office building projects over the years, as this is one of the applications Daikin most frequently provides technology for

Whether it is cooling, heating or indoor air quality, Daikin have been meeting all these needs for offices and business centers for years. Both Daikin in-house developed Inverter and scroll technologies can ensure very high efficiency levels. The inverter technology is definitely a first choice for applications where part-load is important, ensuring low energy consumptions all year round, and a quick ROI. Both technologies, though, can help getting projects BREEAM or LEED certified, thanks to a choice of low GWP refrigerants.

Indoor Air quality then, is another important aspect for office building projects. Daikin mechanical ventilation solutions have been helping businesses minimizing the possibilities of spread of Coronavirus in their facilities, helping keeping employees safe.



Products installed

4 x EWWD-VZ

Total cooling capacity: 3.8 MW



Efficient technologies for the digital sector

The digital sector is on the rise and is constantly looking for efficient solutions that can minimize its impact on the environment. As we know, HVAC systems can definitely make a difference in this sense. This is why Daikin was chosen for this project, to meet the efficiency needs a great company working in the digital payment sector like Nexi needed.



About the project

With this project, the old HVAC plant serving Nexi Payments headquarters in Milan, went through a redesign, which started in 2019 and was completed in 2020. The HVAC plant accommodates four Daikin water to water heat pumps, to meet both the cooling and heating needs of the building. The 4 water to water heat pumps are operating in parallel, providing the system with the ability to independently produce both hot and cold water. The Daikin VZ series made this HVAC system very versatile and able to meet the building's thermal needs in any season.

Nexi's requirements

Among the most important requirements from Nexi we had efficiency. This aspect was very important not only to reduce the carbon footprint of the building, but also to generate savings on operating costs. Daikin's VZ series perfectly met this need thanks to the Inverter Single Screw compressor technology. In fact, Daikin's in-house developed Inverter can guarantee exceptionally high efficiency levels, especially when the units are operating at partial loads, ensuring high seasonal efficiencies. Footprint, then, was another important aspect. The units had to fit a relatively small mechanical room, and it was very important that despite the capacity provided, the units could fit the plant space, avoiding extra work during installation.

Inverter Screw



UK

Products installed

2 x EWAH-TZ

Total cooling Capacity: 2,426 kW



A sustainable HVAC solution for offices

Sustainable HVAC solutions for offices are more and more important as our cities and their business districts more and more need eco-friendly buildings.

The Senator House is a replacement project which will be executed in London. It involved a recently redesigned office building, which ensures comfort and full productivity for the occupants.



The main aspects in the project

Jonathan Lewis Senior Engineer at Flatt Consulting, advising on the replacement of the two chillers at Senator House, and Tommy Roe, building service engineer from H&V Building Services, both worked on the project. Here is what they said:

"The project is a replacement of two existing chillers for a 7 floors office space".

"The main aspects for this project were efficiency over the existing units. The chillers are twelve years old now and the end user have had a few issues with them. So, the client was looking for a more efficient product. Efficiency – ensured by Inverter technology – was a driver for the choice of these units. And then reliability, of course, was another important aspect for the end user.

Also, the refrigerant played a role in the choice made. We chose chillers equipped with R-1234ze for the low GWP and because it is more environmentally friendly. Having sustainable HVAC solution, especially for offices in a busy area in the middle of London is very important. That is a requirement for any project, actually".

"[...] These units offer an improvement over the existing chillers also in terms of noise levels, which is important for an office application. [...] We have been working with Daikin for a while and the things that we really appreciate about the brand, the technical backup is very good as well... it is professional and reliable".



UK

Products installed

4 x EWAD-TZ
6 x D-AHU Professional

Cooling capacity: 3,080 kW

Helping providing a high-quality working environment

With this project Daikin helped providing a high-quality working environment. Wellington Place is a prestigious new urban quarter and business location of choice for leading corporate organisations, located at the heart of Leeds city centre. 7 and 8 Wellington Place, two grade A office buildings, will become the latest regional Government Hub for a number of departments, including HMRC and NHS Digital and will provide civil servants with a high-quality working environment including facilities for social interaction, well-being, cycle storage and showers.

The 378,000 sq ft building will provide HMRC and NHS Digital with a modern and collaborative workspace to use as their new regional centre.

Project details

On behalf of Wates Construction Ltd, Daikin was appointed to provide 4 x Platinum efficiency EWAD-TZ-B air-cooled chillers. The TZ range offers top class performances in energy efficiency, achieving an ESEER rating of 5,78. The EWAD-TZ-B features optimised inverter screw compressors and inverter fans to achieve highest efficiency levels at full and partial loads – chosen to help 7-8 Wellington Place achieve a BREEAM rating of excellent. Daikin also supplied 6 x D-AHU Professional, supplied and installed including site bolt-up and leak check.

Here is what Mr Matt Bell – Assistant Project Engineer at Wates Group – said about how Daikin provided value for this project: "Daikin provided brilliant technical support throughout the design phase and this was further supported with on time delivery to meet a tight programme, high quality install and trouble-free commissioning".





SOUTH AFRICA

Products installed

1 x EWAT-B-
1 x EWYT-B-

Total Cooling Capacity: 550 kW
Total Heating Capacity: 100 kW



R-32 HVAC technology for an Office building project

Daikin's R-32 technology has been recently installed for a commercial development of eight Office Blocks in a parkland residence, which is being built in Steyn City, in Johannesburg, South Africa. More specifically Daikin has installed a R-32 chiller EWAT-B- and a R-32 Heat Pump EWYT-B- to meet both the cooling and heating needs of the Block B, Steyn City project.



Steyn City, William Nicol Office Park, Block B

The project is taking place in Steyn City, which is situated in Johannesburg, South Africa. The Parkland Residence comprises of over 2,000 acres of land that is currently being developed to create the largest parkland residence in South Africa.

This commercial development is positioned adjacent to the William Nicol Gatehouse, and will benefit directly from the fast-tracked lane extensions that have alleviated traffic congestion between Mulbarton Road and the Erling Street turn off to Steyn City. A set of eight office blocks will make up this new commercial development.

The Steyn City Parkland Residence is one of the biggest and most exclusive developments in South Africa, and for this reason it has to offer the best comfort and the latest technologies also in terms of Air Conditioning.

Main project needs and requirements

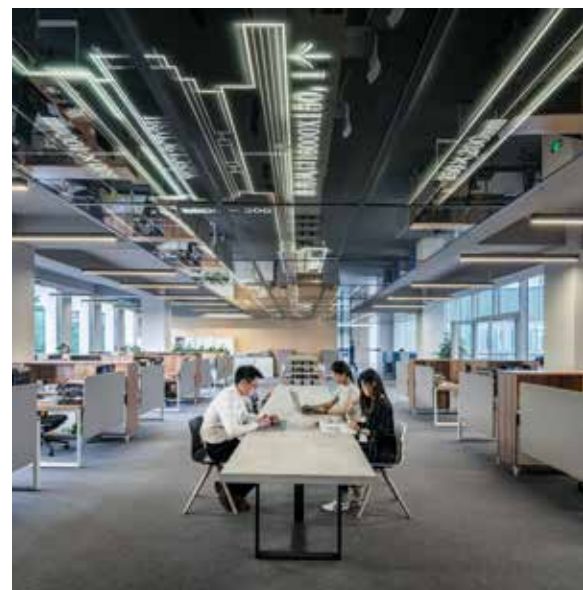
The important aspects were definitely: energy efficiency, sustainability and reliability. All aspects that characterize Daikin products and that Daikin as a brand embodies.

Sustainability

From a technical perspective, the low GWP and sustainability were very important, and that is definitely the reason behind R-32 as refrigerant choice for the units installed. This choice in fact, allowed to address a very important need – using technology which can significantly reduce carbon emissions.

High energy efficiency levels

Also, the very high efficiency offered by both the R-32 units was very important. This is an aspect that clearly has an impact on energy consumptions and running costs related to the office building. So, it was their interest to install technology that can help keep energy consumption as low as possible.



Products installed

1 x EWAT-B-

Meeting the quality standards for a new office building

HVAC quality standards for office space is a main aspect when working on new buildings in a business district.

The Buchanan Wharf project

Thomas Milton, mechanical engineer at TÜV SÜD, working on the Buchanan Wharf project for the last 18 months, and Ronnie Eusebi from Phoenix Commissioning Services Limited recently followed a HVAC project aimed at providing comfort cooling in a new office facility in Glasgow.

monitor a lot of information and that mostly they are pushing well-being for their workers, so they want to guarantee a nice environment for people to work in. They operate 24/7 and that is part of the reason why they do that.

Quality standards for office environment

In an office environment, the main complaint is usually temperature. So, people being too cold or too hot. The Daikin technology is guaranteeing the "too cold problem" is taken care of. One of the most important things for this project was that the energy model is based on achieving an EPC of A, which is quite difficult for a building of this size and scope, and the free cooling technology has helped achieving this goal, as well as the chillers' part load efficiency".



"The project is a new build for a bank, in Glasgow. It is going to be 3 buildings in total. Building 2 is the largest one, has 10 floors and building 3 is four floors. It is going to be almost entirely offices. The main client, the bank, has a lot of standards and high expectations when it comes to indoor air quality and they have very high expectations of controls. The integration with the building management system will be very important, then. They expect to be able to see and

Air Handling Units



Products installed

5 x Air Handling Units
1 x Daikin AHU Modular R
6 x VRV



A total solution for a business center

The NivAxis Gate Business & Conferences Center is a Business and Conferences Center located in Nivelles, Belgium. It offers all-in services to their neighbours in the Business park or to anyone in need of a place to work, a meeting room or meeting space, while enjoying a nice coffee or delicious lunch. Daikin proudly provided a total solution to ensure ultimate comfort for the customers. In collaboration with HERVAC, Super Dealer at Daikin, and BDA design office.

Project background

The Gate is a remarkable and modern building with an area of 3.000 m². The business center serves the companies in the business park, offering meeting rooms and meeting spaces. Maximum comfort for the customer is at the heart of this service, and Daikin's air handling solution is an important part of this. The building includes 2.200 m² of modular offices, 60 offices from 15 to 45 m², 10 conference rooms with a maximum capacity of 120 people, coworking spaces, a lounge, a bar and a restaurant. Essentially, everything the modern businessman and companies need. "In all of these activities, we prioritize the comfort of our customers," said Pascal Segers, Managing Director of The Gate. "The quality of the indoor air and the temperature of the room are essential for this. We rely on a Daikin air treatment installation to meet our requirements."

The HVAC system

The modularity of the building required an easily adaptable system. The objective was therefore to find a modular, responsive and efficient solution that constantly adapts to the needs of different spaces. The solution was found with a system integrating Daikin VRVs in combination with Daikin Air Handling Units, Modular R Series.

"The most important thing was to provide a global solution", explained Adrien Sap, Consulting Sales Engineer at Daikin Belux. "For this project, we opted for different integrated

systems. 6 Daikin VRV IV 3 pipes with energy recovery which provide air conditioning in offices". Each office space is equipped with a wall control. Users can regulate the temperature themselves with the Madoka remote control.

"On the ground floor, for the restaurant, the lounge and the bar area, we proposed a solution ensuring air conditioning via ventilation, using the continuous heating from the VRV IV system. There are no false ceilings, the pipes have deliberately remained visible and have been painted black, for a more industrial look".

The importance of comfort and temperature control

As far as the conference rooms, comfort is very important here. Occupancy can go from 0 to 120 people in a few minutes. In order to ensure a healthy climate and a comfortable temperature, the system must be able to adapt quickly to the circumstances.

"The quality of our service also depends on comfort and air-conditioning. People immediately notice if it's too hot or too cold. Comfort is a big factor in customer satisfaction. As a business center, we think comfort is very important", said Pascal Segers. This is why the building management system is also linked to the room reservation system and is activated according to the occupancy of the rooms. With the iTouch Manager, changes can be made at any time and users can also adjust the temperature themselves.



GERMANY

Products installed

2 x 40 kW air to water heat pumps
2 x Split Units
1 x Daikin Perfera indoor unit
1 x D-AHU Modular P | Air flow up to 3,650m³
2 x VAM
1 x iTM with WAGO interface



A total solution for the new Headquarters at TKS

With the TKS project, Daikin managed to provide a total solution including heating, cooling and ventilation to the new 2.200 m² corporate headquarters of TKS in Borken, Germany. TKS GmbH the market leader for complex refurbishments in the European brand hotel industry. The company is also well known for paying close attention to sustainability when designing solutions for clients. So, it is no surprise that they required the same attention to sustainability in the design of the HVAC system for their building.

Heating, cooling and ventilation in a single total solution

Daikin convinced TKS with a total solution approach, perfectly integrating technologies for commercial applications and technologies from the residential portfolio.

Two air to water heat pumps, one per wing of the building, were installed on the ceiling to ensure there is a perfect working environment at TKS offices. While a Daikin D-AHU Modular P system with an air flow up to 3.650m³, in combination with two VAM series ventilation systems with heat recovery the providing air flow up to 650 m³, were installed to provide the building with ventilation, and then with the correct air exchange and air filtration needed to create a healthy and comfortable work environment.

The necessary cooling for the server room, then, was provided by two Daikin split units providing air conditioning through an indoor unit from the Perfera series.

The whole system is controlled by Daikin's Intelligent Touch Manager (iTM) with WAGO interface. The user-friendly control system ensures further energy savings thanks to intelligent energy management, also ensuring trouble-free maintenance. The WAGO interface also allows Daikin to control third-party technology such as lighting, pumps and fans with the iTM.

Energy efficiency among the main goals

All decisions made in terms of building design as well as Air Conditioning system design, were based on the Energy Saving Ordinance (EnEV from 2016) requirements. So, efficiency was among the most important goals in this HVAC project, both to provide the building with technology that can generate savings on operative costs, but also to minimize the impact the TKS headquarters will have on the environment.







Tourism & Travel Industry

Despite the pandemic year, Daikin has supported many businesses in the tourism & travel industry, helping them design the best customer experience and ensure customers' safety

Customer experience is the number one priority for any business in the Tourism & Travel industry. Daikin has always helped business owners in this sector being responsive to customers' comfort and Indoor Air Quality expectations, no matter the season, ensuring the best possible experience.

But this year the Indoor Air Quality has become even more important. Daikin mechanical ventilation solutions have been helping businesses in this sector minimizing the possibilities of spread of Coronavirus in their facilities, helping keeping both employees and customers safe.



GHANA

Products installed

4 x EWAD-T



Highly efficient HVAC technology for an airport

Daikin is no stranger to providing highly efficient HVAC technology for an airport project. This time, the facility involved was an International Airport based in Kumasi, Ghana, West Africa.



Project background

For this project the clients requested a witnessed performance test of the units, which was carried out from remote due to COVID-19 related restrictions.

We had the chance during the tests to talk with Mr Adeilton Ferreira – project coordinator for the contractor handling the HVAC system and everything relates to it. Here what he told us about the project:

“The Kumasi airport is a 5.000 sqm International Airport in Kumasi, in Ghana. Being an International Airport, it has to follow all the requirements International Airports have. It is based in the West of Africa, where we reach high temperature. That is why temperature control is very important. we need to maintain the indoor temperature in the airport at 24/25 °C, as it is very important to ensure passenger are comfortable at all times.

Energy efficiency

The HVAC system includes air-cooled screw compressor chillers and fan coils. The most important aspect for this project is definitely energy efficiency, as it is important for the airport operators the energy consumptions are kept as low as possible.

Daikin technology was chosen exactly for this reason. It was the solution that best met the requirements of this project. Another important aspect was the integration with our BMS, which is heavily used to ensure all the systems in the airport run as efficiently as possible.

The test, then, is another important aspect. We really need to ensure the units chosen will deliver the performance we expect and the parameters we need. Being able to assess the performance of the chillers today will allow us to proceed with our plan with no issues or delays”.



GERMANY

Products installed

1 x EWWQ-L
2 x D-AHU Professional

A complete HVAC system for a hotel

HVAC systems in hotels applications are usually required to create the best possible comfort for guests with reliable and efficient technologies. That was the case of a hotel in Olching, near Munich, in Germany.

The project in details

The hotel needed a complete solution, that could be provided by a single supplier, and Daikin, thanks to its comprehensive solutions portfolio, managed to cover all the hotel needs with a complete and integrated systems including Air Handling Units, chiller and fan coils.

The equipment provided will be used to cover all the comfort cooling and heating needs of the facility – from lobbies to restaurant and the guest rooms in the facility. Comfort is of course a primary for this kind of application. It is so important that it defines the customer experience offered to guests. And customer experience – we know – is what the hotel industry is all about as it is a synonym of hospitality.

Other than comfort, indoor air quality was another very important aspect. That is well

documented by the fact that Daikin AHU professional are characterized by being able to provide very high standards of air filtration, ensuring the well-being of the people occupying the indoor spaces served by the unit.

Also, the topic of indoor air quality is becoming very relevant to hotels as well, also in relation to the COVID-19 pandemic and the need of businesses to find ways to get back on track despite the difficulties Coronavirus has put in front of them.

And then, there were efficiency and sustainability. From this perspective, Daikin has provided value with its cutting-edge and sustainable technology, which helped offering a complete Eurovent class A and ERP 2018 compliant system.



Air Handling Units



GERMANY

Products installed

4 x VRV IV heat recovery
2 x VRV IV heat pumps
6 x Condenser units
7 x D-AHU R/P units
1 x Intelligent Touch Manager



Another total solution

by Daikin

In this project Daikin offered again a total solution. This time it was for the Rittergut Störmede Hotel, in the heart of Westphalia, in Germany. The hotel has been recently built to be a modern complex in an attractive location. It was equipped with a Daikin complete kit for hotels, consisting of VRV heat pumps with heat recovery (heating and cooling), Air Handling Units and central control technology. The modern hotel offers 55 rooms, a fitness area with indoor swimming pool and sauna as well as a multifunctional event area, which can be used for celebrations and conferences.

Daikin technical solution

The hotel building was equipped with Daikin ventilation and air conditioning systems, also including control technology, so that guests can enjoy their stay in a modern and pleasantly air-conditioned atmosphere. The special feature is: All hotel rooms can be cooled and heated as required using the VRV heat pump's three-pipe system. Due to the individual control in each room, guests can adjust the temperature to their personal requirements. If heating and cooling requirements in a system occur simultaneously, the operator benefits from the possible heat shift within the refrigeration circuit and thus reduces the operating costs. If cooling is required in one room and heating is required in another room at the same time, the thermal energy absorbed in the room to be cooled can be used to heat the other room. No additional energy, or separate systems are required to meet this need. Thus, energy efficiency can get along with guests' comfort and premium customer experience. The team of Leniger Kälte-Lüftungstechnik GmbH installed a total of four VRV three-pipe systems and two VRV two-pipe systems, connected to six condenser units, as well as seven Air Handling Units ensuring mechanical ventilation and great Indoor Air quality.

A total solution

All systems are linked to the hotel booking system using the Daikin intelligent Touch Manager, so that guests can be welcomed with a pleasant temperature right from the start upon arrival, and then the Air Conditioning system can automatically switch to energy-saving mode after check-out.

The intelligent Touch Manager offers intuitive access to all functions with a consistent graphical user interface. The reception staff can retrieve the most important information at a glance. For example, the "Energy Navigator" function can be used to analyze the consumption data of the individual rooms, allowing to monitor operating costs at any time. In addition to that, the system has cooling and overheating protection, which prevents the room temperature from falling below 16 °C in winter and rising above 32 °C in the summer.

Customer satisfaction

"At the beginning of the planning phase, we suggested various providers and solutions to the customer. On the basis of the requirements, the Daikin concept consisting of VRV heat pumps with heat recovery (heating and cooling), ventilation systems and central control by Daikin's intelligent Touch Manager was a complete kit that convinced both us and the owner Hartmut Bröggelwirth, managing director of the hotel," says Dominik Jäker, executive planner at Enertec Ingenieurgesellschaft mbH, explaining the decision. Hartmut Bröggelwirth adds: "In the hotel business, all areas must be heated and cooled. The solution offered by Daikin met our needs and those of our guests, who deserve the best possible stay."



GERMANY

Products installed

2 x D-AHU Modular R units |
Airflow: 6,000 m³
12 x VRV
10 x wall units
175 x duct units
14 x Round-flow suspended ceiling
units with self-cleaning cover
1 x intelligent Touch Manager
199 x cable remote controls



Daikin HVAC solution for a busy hotel

Daikin has had the possibility to support an important player in the German hospitality sector providing its HVAC solution for a busy hotel in Essen, Germany. It is the GHOTEL hotel & living Essen. A 174 rooms hotel with five conference rooms and a restaurant and a bar, entirely built in 2016 in the attractive holiday destination of Essen. Comfort was an essential aspect for this project, as the hotel aims at providing guests with a modern and cozy setting and HVAC technologies have an important role in this.



Customer satisfaction

The GHOTEL hotel & living Essen is located in the immediate vicinity of the main train station, in the city center. It has 174 rooms and five conference facilities, a restaurant and a bar. The hotel offers a combination of modern, functional design and a warm, friendly atmosphere. "The whole hotel has been designed to deliver high energy efficiency and low CO₂ emissions," says Thomas Winands, Director of Operations at the GHOTEL hotel & living. "The GHOTEL hotel & living in Essen has now been in operation for almost three years, with absolutely satisfactory energy consumption values. This has a positive effect on the environment and our wallet. Another aspect is the pleasant atmosphere that our guests can enjoy in any time of the year thanks to Daikin's air conditioning and ventilation technology".

efficient cooling and heating technology with individual controls ensure flexibility in the control of temperature. Daikin has installed at the GHOTEL hotel & living Essen 12 air-cooled heat pumps with heat recovery and two ventilation units from the Modular R series. "The decision to use these technologies was made after careful consideration of the building requirements. Daikin's solution turned out to be the most economical and functional in the long term. In addition, there was the opportunity to visit and hear from other hotel's management and facility management department, which really convinced us" says Mr Winands.

Integrated AHU and VRV system: a solution tailored to your needs

The VRV IV Heat Recovery System was installed on the ceiling and included units ranging from 22,4 to 33,5 kW able to achieve up to 4,90 COP. All the units are controlled via the Daikin intelligent Touch Manager. While the Air Handling Units, equipped with highly efficient heat exchangers and heat recovery option, are used to guarantee air exchange in the facility, extracting exhaust air and supplying an air flow of 6.000 m³ per hour of fresh air indoors.

The project

Daikin had the chance to work on a hotel project requiring a special attention to sustainability. The aim was to make the building as efficient as possible, in order to save on energy. The design of the building, also due to the fact that the hotel is placed in a busy area, do not allow to open the windows. This makes mechanical fresh air supply via a ventilation system inevitable. In addition,





Retail

Daikin meets both

business owner needs and customers comfort expectations

Providing the customer with the right level of comfort and indoor air quality is definitely among the priorities businesses in the retail sector have.

Daikin is a master in helping business owners designing the right indoor environment, always taking into account the need to do that in the most efficient way in terms of energy efficiency,

to minimize business owners' expenses, and businesses impact on the environment.

Daikin can do that thanks to the wide range of chillers and heat pump solutions, all ensuring great efficiency levels; and also thanks to the Air Handling Units portfolio, which can ensure efficiency and outstanding indoor air quality in any type of building.



Products installed

2 x EWYT-B-



Daikin R-32 heat pumps commissioning for a supermarket

Two Daikin R-32 heat pumps were recently commissioned for a HVAC project involving one of the many branches of a large supermarket chain in Italy. This specific project was executed in Rome and saw a team of our engineers performing a series of activities on site for the commissioning phase.

The Commissioning Phase

The commissioning phase ensures that the machine is correctly integrated with the customer's system and is also the moment to provide the customer with valuable information for the future management of the plant. In this specific case Daikin Applied Europe – Headquarter for Daikin Applied products – handled directly the commissioning phase, sending a team from the engineering department on the field, to perform all the necessary activities. This is something the headquarter periodically does, so Daikin's development and production center for Applied products can

have a perfect understanding of the process and the challenges installers are faced with.

This was a way to ensure customer satisfaction, performing live tests to prove the very high efficiency of the EWYT-B – both in Cooling and Heating mode – along with all the other characteristics of the series. But this was also a chance for Daikin to monitor and study the needs of installers and end users, so the company can always provide a high-quality service, guaranteeing that the units and the plant in general will operate at maximum performance and with the maximum safety.

Daikin Applied Europe commissioning Team

Other than proving the efficiency of the units and making sure that the same units performed as expected, as per the design operating conditions and the safety standards requires, the commissioning phase required Daikin's team to perform tests regarding noise levels and defrost. Sound acquisition tests in particular were very important and – as expected – showed very low noise generation.

This specific aspect was important for the success of the whole HVAC project, as these Daikin R-32 heat pump units were installed in the center of the city of Rome.

Moreover, defrost tests were done to show the customer how the new defrost logic by Daikin is very fast and efficient, helping thereby to keep the plant stable.



GERMANY

Products installed

1 x D-AHU Modular P
1 x ERQ condensing unit 200 AW 1
1 x Water Coil for heating

An all-in-one system for customers' peace of mind

In this project Daikin offered a highly efficient ventilation solution for one of the many branches of a large supermarket chain in Germany. The supermarket also houses fast food restaurants, a butcher shop and a bakery, and of course, being a very busy environment, really needed to guarantee very good levels of indoor air quality to customers.

The project in greater detail

The Daikin Air Handling Unit was installed on the rooftop of this supermarket to ensure this branch has a highly energy efficient ventilation system, meeting both customers' needs for a healthy and comfortable environment and operators' needs to keep operative costs low. For this project Daikin provided a Eurovent A+ class unit to satisfy the expectations of the supermarket operators, but the solution provided in this case offers much more than just energy efficiency.

The customer has received an all in one plug and play system from Daikin – a direct expansion cooling and heating system with control and pre-wiring. The system included, other than the Daikin Modular P Air Handling Unit, an ERQ-AW1 condensing unit by Daikin. The combination of the two technologies not only ensures peace of mind for the customer

who can refer to a single supplier. It also ensures really high energy efficiency levels, thanks to the Inverter technology in both products.

But also thanks to the premium quality counter flow plate heat exchanger in the Modular P, which can recover up to 93 % of thermal energy, allowing savings on heating bills for more than 25 %.

And then, there is the aspect of the Indoor Air Quality and air-flows separation. The Modular P Air Handling Unit can guarantee a high level of separation of the air flows, thanks to the aluminum counter-flow exchanger, which, as it is not permeable, makes the contamination between the air flows entering and leaving the unit impossible.





Daikin Europe N.V. Naamloze Vennootschap Zandvoordestraat 300 · 8400 Oostende · Belgium · www.daikin.eu · BE 0412 120 336 · RPR Oostende (Publisher)

FSC

ECPEN21-415

08/21



The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V. Daikin Europe N.V. has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication. All content is copyrighted by Daikin Europe N.V.

Printed on non-chlorinated paper.