

Reference List

HOSPITALS



RELIABLE HVAC SYSTEMS IS A KEY FACTOR



Hospitals are very complex areas and **indoor air is a key aspect** with great impact on the overall ambient conditions. Many factors influence IAQ (indoor air quality) within hospitals: patients, staff, outdoor air and the building itself.

To **ensure the best indoor air quality and a stable environment**, relying on a proven, efficient and highly reliable cooling equipment is fundamental. Temperature and humidity levels must be kept under control, especially in particularly critical rooms, such as operating theatres and laboratories. At the same time, it is also important to **reduce acoustic emissions and vibrations**, as they are fundamental aspects that impact the general comfort within the hospital, for both patients and staff.

In such a complex scenario, HVAC systems must be designed with the greatest care and customised to meet all specific requirements and deliver the best performance and conditions.

Efficiency, great performance and reliability are important aspects in all air conditioning systems, but become essential in HVAC systems that must be installed in hospitals and care facilities.

Geoclima has developed many units for hospitals around the world, ensuring not only great performance and the highest reliability, but also state-of-the-art controls to always monitor the operation of the units and, as a consequence, to keep indoor air quality always under control.

UNITS

Place	Model	kW	Description	N.
Cardiology Clinic, Tashkent - UZ	GHA B2140A AC-34 TP	555	Air cooled chiller with screw compressors	1
Parkes Hospital - AUS	TMA 1B375A ES EC-34 SPEC	750	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	2
Bairnsdale Hospital - AUS	VHA 2140A EC	140	Air cooled chiller with scroll compressors	1
Sonac Blood - AUS	VHA 2600A EC-01 K TP SPEC	206	Air cooled chiller with scroll compressors	1
Werribee Health (Melbourne, VIC) - AUS	TMA 2A640A EC-34 K	700	Air cooled chiller with oil-free centrifugal compressors	1
Adelaide Nursing School - AUS	TMA 3A975A ES EC-34	3800	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	4
St. John of God Geelong Hospital - AUS	TMA 2A550B ES EC-34	550	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	1
St. Vincent Hospital Melbourne - AUS	VHA 2600A EC-01-SP TP	1000	Air cooled chiller with scroll compressors	1
	TMA 2A500A ES EC-34 K		Air cooled chiller with oil-free centrifugal compressors	1
Wyndham Medical (Melbourne, VIC) - AUS	TMA 2A500A ES EC-34 K	800	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	1
Hamilton Hospital (Hamilton, VIC) - AUS	VHA 2600A EC-01 K TP	600	Air cooled chiller with scroll compressors	1
Hamilton Hospital (Hamilton, VIC) - AUS	TMA 1A325A ES EC-34 K		Air cooled chiller with oil-free centrifugal compressors and Evaporative System	1
Alfred Hospital Melbourne - AUS	VHA 2360A EC-01 K TP	500	Air cooled chiller with scroll compressors	2
National Canberra Hospital - AUS	TMA 2B700A ES EC-34 K	850	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	1
Manning Base Hospital (Taree, NSW) - AUS	TMA 2B700B ES EC-34 K	1780	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	2

Place	Model	kW	Description	N.
MSD Animal Health - AUS	GHA B260A ES EC-34K	480	Air cooled chiller with screw compressors	2
North East Health – Wangaratta Hospital - AUS	TMA 2A550A ES EC-34 K	950	Air cooled chiller with oil-free centrifugal compressors	1
	TMA 1A300A EC-34 K		Air cooled chiller with oil-free centrifugal compressors	1
Macquarie Hospital (Sydney, NSW) - AUS	TMA 1A300A EC-34 K	300	Air cooled chiller with oil-free centrifugal compressors	1
Bathurst Hospital (Bathurst, NSW) - AUS	TMA 1A300A EC-34 PU K	310	Air cooled chiller with oil-free centrifugal compressors	1
North Ryde Hospital (Sydney, NSW) - AUS	TMA 1A300A EC K	300	Air cooled chiller with oil-free centrifugal compressors	1
Ospedale Molinette - ITA	TMA 3Z900A LN EC ZE	880	Air cooled chiller with oil-free centrifugal compressors	1
	TMA 3Z900A LN EC ZE	880	Air cooled chiller with oil-free centrifugal compressors	1
	TMA 2Z550A LN EC ZE	600	Air cooled chiller with oil-free centrifugal compressors	1
	TMA 2Z550A LN EC ZE	600	Air cooled chiller with oil-free centrifugal compressors	1
	TMA 2Z550A LN EC ZE	600	Air cooled chiller with oil-free centrifugal compressors	1
	TMA 2Z600A EC FC ZE	579	Air cooled chiller with oil-free centrifugal compressors	1
	GHA BF270A LN EC-ZE	264	Air cooled chiller with screw compressors	1
Ospedale Ovada	GHA F280A LN EC ZE	283	Air cooled chiller with screw compressors	1
Ospedale Novi Ligure - ITA	GHA F280A LN EC ZE	283	Air cooled chiller with screw compressors	1
	GHA BF270A EC-ZE	220	Air cooled chiller with screw compressors	1
	GHA F290A EC-ZE	260	Air cooled chiller with screw compressors	1
Policlinico Tor Vergata	TMA 3B1300A ES EC-34	3900	Air cooled chiller with oil-free centrifugal compressors	3

Place	Model	kW	Description	N.
Ospedale Molinette - ITA	GHA F2100 A LN EC-ZE	320	Air cooled chiller with screw compressors	1
	GHA F2180A EC-ZE SPEC	705	Air cooled chiller with screw compressors	1
	GHA F2180A EC-ZE SPEC	705	Air cooled chiller with screw compressors	1
Radiology (Udine) - ITA	VHA-1028-A-CH-EC-BP-10-LN-FL-AV1-WEB-GP-EP3.3-HR	70.4	Air cooled chiller with scroll compressors	1
Hvidovre - DK	TMH 2Z700 DC-ZE	1800	Water cooled chiller with oil-free centrifugal compressors	3
Sct.Hans Hospital - DK	TMH 2W500 WT-ZE	1000	Water cooled chiller with oil-free centrifugal compressors	2
Abakan Hospital - RU	TW Standard	-	Air Handling Unit	2
	TWH Hygienic			1
Medical building (Crimea) - RU	TW Standard	-	Air Handling Unit	6
Perinatal Center (Pskov) - RU	TWH Hygienic	-	Air Handling Unit	12
	TW Standard			23
Hospital (Saratov) - RU	TW Standard	-	Air Handling Unit	1
	TWH Hygienic			2
Davidovsky Hospital (Moscow) - RU	TWH Hygienic	-	Air Handling Unit	12
	-	-	Air distributor with HEPA filter	6
	-	-	Air distributor with HEPA filter	11
Hospital (Kazan) - RU	TW Hygienic	-	Air Handling Unit	6
Perinatal Center (Moscow) - RU	TW Standard	-	Air Handling Unit	12

Place	Model	kW	Description	N.
Hong Kong Baptist Hospital - HK	TMA 3B1100BEC	4400	Air cooled chiller with oil-free centrifugal compressors	4
	TMA 2A550A EC	2800		5
	TMA 2B800B AC	800		1
	TMA 2A500B AC SP	1060		2
	TMA 2A550A EC	1100		2
	TMA 2B800A EC	1640		2
	TMA 2B700A EC K	700		1
	TMA 1A220AEC	200		1
	TMA 1B350A EC K	660		2
	TMA 2A550A EC-34 K	560		1
	TMA 2B800A EC-34 K	820		1
Queen Elizabeth Hospital - HK	TMA 2B800A EC	1600	Air cooled chiller with oil-free centrifugal compressors	2
Pamela Youde Nethersole Eastern Hospital - HK	TMA 2B700A EC K	700	Air cooled chiller with oil-free centrifugal compressors	1
Moncucco Clinic (Lugano) - CH	TMH 1Z300 WT-ZE	600	Water cooled chiller with oil-free centrifugal compressors	2
EOC Biasca - CH	TMA 1Z300A LLN EC-ZE-SP	640	Air cooled chiller with oil-free centrifugal compressors	2
	VHH-2096-CH-BP-10	440	Water cooled chiller with scroll compressors	2

Place	Model	kW	Description	N.
Roche Shire Park Medical - UK	VHH F1S15 DC-290	148	Water cooled chiller with reciprocating compressors	2
	VHA F2S20A LN EC-290	36.2	Air cooled chiller with reciprocating compressors	1
NHS Tooting St Georges Hospital - UK	TMA 1W270R ZE SP	488	Air cooled chiller with oil-free centrifugal compressors	2
Sandwell Hospital - UK	TMA 2A600A EC-34	1200	Air cooled chiller with oil-free centrifugal compressors	2
Nottingham Trent University Hospital - UK	TMA 1A300A EC FC-34	300	Air cooled chiller with oil-free centrifugal compressors	1
Cardiff University - UK	TMA 2A480A EC LN	500	Air cooled chiller with oil-free centrifugal compressors	1
Proton Beam, Manchester - UK	TMA 3B1000A EC LLN	4816	Air cooled chiller with oil-free centrifugal compressors	4
Nottingham University Queens Medical - UK	TMA 3B900A LN EC34	1000	Air cooled chiller with oil-free centrifugal compressors	1
Cardiff University, Mass Spectrometer - UK	VHA 1540A AC 01	500	Air cooled chiller with reciprocating compressors	1
Cardiff Uni Life Science - UK	TSE2A600-34	1800	Condenserless chiller with oil-free centrifugal compressors	3
	RCE 6V12F12M		Remote condenser	3
Roche Medical	GHAF2100AEC290SP	990	Air cooled chiller with screw compressors	2
Nottingham University Queens Medical - UK	TMA2B640ALNEC34	600	Air cooled chiller with oil-free centrifugal compressors	1
	TMA3B900ALNEC34	1000		1
University Hospital - CSC Building (Nottingham) - UK	VHR F 2V15ZE	60	Air cooled chiller with reciprocating compressors	1
Churchill Hospital (Oxford) - UK	VSE-C 238/10	134	Condenserless chiller with reciprocating compressors	1

Place	Model	kW	Description	N.
Boots Science Building (Nottingham) - UK	TMA 2A480A EC LN	480	Air cooled chiller with oil-free centrifugal compressors	1
Heath Hospital (Cardiff) - UK	TMA 3A900AEC	900	Air cooled chiller with oil-free centrifugal compressors	1
Shire Pharmaceuticals (Basingstoke) - UK	TSE1A300	600	Condenserless chiller with oil-free centrifugal compressors	2
Bio Medical Science Unit, John Radcliff Hospital (Oxford) - UK	TSE 300/34	600	Condenserless chiller with oil-free centrifugal compressors	2
Edward Roybal Hospital, California - USA	TMH 1C440 WT-34	1317	Water cooled chiller with oil-free centrifugal compressors	3
Bamian Hospital - Afghanistan	TMA 2A550B EC-34	1264	Air cooled chiller with oil-free centrifugal compressors	2
Wangaratta Hospital - Australia	TMA 2A550A ES EC-34K	640	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	1
Great Western Hospital - UK	TMA 2A450A EC-13	450	Air cooled chiller with oil-free centrifugal compressors	1
Sandwell Hospital - UK	TMA 1A300A EC 34	600	Air cooled chiller with oil-free centrifugal compressors	2
Asti Hospital - Italy	TMH 6Y3000 WT-ZE SPEC	3000	Water cooled chiller with oil-free centrifugal compressors	1
Colac Hospital – Australia	TMA 1A270B EC-34 CM	600	Air cooled Circlemiser chiller	2
Oldham Hospital - UK	TMA 1Z300A LN EC-ZE PU	590	Air cooled chiller	2
Hospital Pardubice – Cech Rep.	TMH 1C440 WT-34	800	Water cooled chiller	2

CASE STUDIES



MANCHESTER HOSPITAL

Background

The Manchester Proton Beam Therapy centre is a brand new five storey facility at the Christie Hospital in Manchester, one of Europe's leading cancer treatment hospitals. The MPBT project is going to be the UK's first NHS high-energy proton beam therapy center and will provide three treatment rooms, one research room, patient reception, consultation rooms and public space in one 5 storey building.

Purposes

The units are going to serve the entire building, including proton beam machines, which require constant cooling and will take up the bulk of the building load. From this point of view it is clear that maximum reliability has been a key factor in the choice of Turbomiser technology.

Project

The project involves the design, manufacture and installation of 4 air cooled Turbomiser chillers, with centrifugal compressors, providing 1200 kW of cooling capacity each. The estimated cooling load for the building is around 3.6 MW, therefore all four 1200 kW chillers should be running in part load to achieve the duty. Turbomiser running at part load provide always the highest efficiency and effective cooling. will be completed.

TOR VERGATA POLYCLINIC - ROME

Background

Geoclima was selected to supply 4 MW of cooling capacity for the Tor Vergata Polyclinic in Rome.

Purposes

Ensuring a stable and reliable environment for hospitals is vital for patient and staff safety and comfort, and for ensuring that delicate treatment and monitoring systems function as intended: to this end, relying on a proven, efficient and highly reliable cooling equipment is paramount. Temperature and humidity levels must be kept under control, especially in particularly critical rooms, such as operating theatres and laboratories. At the same time, it is also important to reduce acoustic emissions and vibrations, as they are fundamental aspects that impact the general comfort within the hospital, for both patients and staff.

The Geoclima's project for the Tor Vergata Polyclinic consists in the replacement of the existing cooling plant that relied on four inefficient screw chillers.

Project

The cooling plant is going to serve both rooms and offices and operation theatres and laboratories, and it has been designed to ensure the best air quality and the maximum efficiency. For this project Geoclima designed, assembled and installed three 1300 kW Turbomiserair cooled units with Evaporative System providing almost 4 MW of total cooling capacity. The units are installed outside on the ground and are provided with compressor insulation boxes and the DNC for the noise reduc-



ABOUT US

We design and produce special units for applications in air conditioning, refrigeration and air handling systems, with low environmental impact and specifically designed to meet all specific clients' requirements in terms of size, capacity, performance and temperature. **Where the others stop, we go on.**

Our identity is founded on:



INNOVATION

We use the highest technology available in order to maximize efficiency, reduce start-up costs and guarantee a satisfactory return on investment.



CUSTOMIZATION

All types of machines can be provided and developed in non-standard version, thanks to the flexibility of our production system.



ECO-SUSTAINABILITY

We aim to develop applications with the lowest environmental impact possible, using refrigerants with a very low GWP, such as the HFO-1234ze and the R290.

Our facilities and sales offices around the world.



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