



Advanced Cooling- Chiller Hire Case Studies

Rental Systems Available For;

- Process cooling
- Building Air conditioning
- Chilled water systems
- Low temperature refrigeration
- Ice rinks
- Events/film set cooling
- Data centre cooling
- Disaster recovery stand-by systems

London Distribution/ Engineering Depot

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Useful Links

- [Chiller Hire Fleet](#)
- [Advanced Cooling Group](#)
- [Advanced Cooling Service](#)
- [Advanced Cooling Hire](#)
- [Cooling4FilmSets](#)
- [Events Cooling](#)
- [Data Centre Cooling](#)
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Advanced Cooling Hire is the specialist rental cooling division of the Advanced Cooling Group. We specialise in supplying temporary water chillers and space cooling systems Europe-wide .

The division was created by the management team at Advanced Cooling Solutions which has been trading successfully in the air conditioning service industry for many years- specialising in water chillers. The company has built a solid reputation within the industry and with our many clients. We wanted to bring our engineering know-how to bear on the niche high capacity rental cooling market, supplying high quality reliable units and systems.

The high capacity temporary cooling sector presents unique challenges in terms of the capital and running costs required to maintain a large fleet. As a specialist in the field we are able to closely control these costs by sourcing high quality equipment from major manufacturers, and utilising our extensive engineering capabilities, operate it reliably with minimal downtime costs. These cost efficiencies can be passed onto the customer, meaning we can offer some of the most cost effective rates in the industry without compromising on standards of customer service or equipment reliability.

OUR RENTAL FLEET:

**Specialist rental chillers/cooling systems to suite all applications
Over 10 Megawatts of portable cooling capacity available for hire
Only chillers with an excellent record for reliability stocked
Large stocks of hosing, cabling, pumps etc. for fast turnaround**

New to the fleet is the Star Refrigeration Turbocor water chiller. We are one of the very first companies to offer this technology to the rental cooling market. Please see further details below.

OUR SERVICE:

**24/7 Nationwide next day service for most installations
Long and short term hire/ lease periods at unbeatable rates
All temporary systems designed to fully meet your requirements
24/7 technical back-up for complete peace of mind**

call now for a quote

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CASE STUDY # 1

1000KW PROCESS CHILLER INSTALLATION

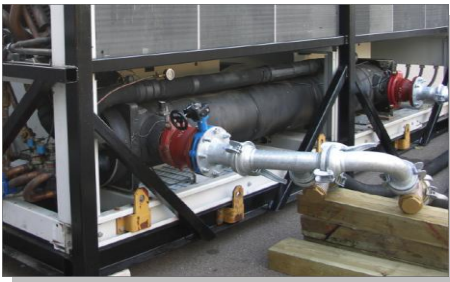
A 1 megawatt chiller was installed to provide emergency process cooling for the WH Smith Halo plastic injection moulding factory.



Chiller sections being installed



The completed installation



The main module including the evaporator and water connections

The client was experiencing increasing production difficulties in the hot summer months due to on site chiller failures. Chilled water performs the important role of cooling the extrusion after the injection molding process. The situation was becoming critical and a production shut-down was looking increasingly imminent due to loss of cooling capacity.

A modular chiller was installed to meet the cooling needs of the plant. Water was pumped from the hot side of a mixing pit through the chiller and into the cool side, forming a primary circuit that was pumped into the building. The complete installation was installed in two days completely meeting all their cooling requirements. The system ran at consistent loads of 6-800Kw through-out the rental period.

The chiller provided seamless operation for 4 months which allowed for full production capacity through the warm summer months.

This Modular cooling rig is a modified Climaveneta BE/SRAT/SL3603 chiller. The modification design criteria was to allow for increased flexibility of use. This chiller is more portable than the original, can be fitted into awkward areas and can be used in a 650 or 1000Kw configuration- a very flexible- powerful- reliable machine.

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CASE STUDY # 2

700Kw DATA CENTRE AND COMFORT COOLING

EMERGENCY HIRE INSTALLATION



The chillers loaded and ready for delivery



Elevated view of the completed installation



The completed installation

Two very reliable Trane RTAB water chillers installed to meet the complete cooling needs of government offices.

When a long term client approached us with a request for an emergency replacement for their existing faulty Carrier water cooling plant, we responded quickly with an effective recovery system for seamless operation of the building. Critical data centre operation was maintained saving considerable costs from unplanned down time.

The total building load was calculated at 650Kw. Two reliable Trane RTAB air cooled temporary water chillers with a total cooling capacity of 750Kw were installed along with all cable, pumps and hosing as required. The complete system was successfully installed in one day, leaving the client with a reliable fully commissioned chilled water system.

The plant has to date been in successful operation for 18 Months. The lead chiller in the circuit has run continuously in all load conditions and has clocked up over 12,000 hours operation. Weekly service checks by our fully qualified engineers have given the client high levels of peace of mind and ensured complete reliability.

The chillers were piped in series for closer more stable temperature control. Low supply water temperatures of 1.3 degrees were safely possible due to a 20% glycol mixed water system and the excellent controls fitted which constantly adapt to load conditions. The lag machine set-point was set at 1.6 degrees to enable running only after the lead unit reached capacity. In this way very stable close control was achieved with flow temperatures in the range of 1.2- 1.6 degrees in all load conditions.

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Installing the centralised water distribution system



The completed chiller and pump station installation



A climate control unit installed with fixed ductwork supplying a light-weight structure (marquee)

CASE STUDY #3

The temporary HVAC Overlay Project at the Lee Valley Olympic Training Basketball Court Project

ACS were contracted by Nussli Switzerland to supply a complete on-hire HVAC system to the temporary basket training structures built on the Lee Valley park.

The project was designed from the ground up by Advanced Cooling. Cooling load was calculated at 220kw per court with an additional 150kw for the changing and mixed use areas. A marginal heating requirement was envisaged for early morning and evenings. A fabric air-sock distribution system was recommended- these distribute air evenly over large areas reducing drafts/ cold spots.

ACS 160.120 climate control air handling systems were specified for their high air volume, heating and cooling capabilities. Sophisticated on board electronic controls offered the capability to control the space temperature closely to the design of 22 Degrees. A centralised chilled water system was specified, including; 1x Carrier 700Kw water chiller, a 23kw twin head pump station and a reinforced rubber hose distribution system with stainless steel fittings.

The system was installed within 3 days and operational for a period of 3 months during the training and games periods.

Overall this system offered exceptional service. Temperature control of 2 Degrees around set-point was achieved, well with the 8 degrees specified. In the hottest conditions with a 36 Degree outside ambient Temperature the system maintained an internal of 24 Degrees- a 12 degree differential. Early in the project due to considerable rain-fall dehydration was required- high levels of water were removed by reducing chilled water flow temps and using the AHU's heaters to simultaneously reheat space supply air.



Internal shot of one of the completed basketball courts. One of the 800mm air socks can be seen to the rear

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Six ACS 100.60 rental air handlers were fitted.



This was a big structure measuring over 70x 30mt in footprint



The trane 400kw rental chiller supply the AHU's with cool water

CASE STUDY # 4

The Eton Manor Additional lightweight Structure Project on the Olypmic Park

A complete 400kw climate control system designed and installed at short notice for Olympic ceremonies performers on the Eton Manor site.

This project came about as a result of the test events held prior to the Olympics. It was found that insufficient space was available for the opening ceremony performers to make up in.

At short notice ACS were asked to specify and install a temporary climate control system to air condition the area. The tent was very large at 70x 30mt meaning a high air volume/ velocity system would be required. Equipment was restricted to one side of the tent and budget limitations meant distribution systems such as air sock could not be used.

ACS supplied and fitted Six ACS 100.60 AHU's, a 400kw portable water chiller with a reinforced rubber hose distribution system. Flexible ducting was used for supply and return air distribution. The air handlers were able to supply the air at enough velocity to circulate air evenly over the whole internal area- consistent temperatures were maintained throughout the space in this way.

The whole event project was specified, fitted and commissioned within a week. Decommissioning took 6Hrs.

Simplicity of design and versatile equipment was key to fast installation. The ACS 100.60 air handler is a one box heating and cooling solution- quickly installed, they offer full auto control. Electric on- board heating allows simultaneous heating and cooling in different zones as opposed to heat pump systems where all are heating or cooling. Dehumidification is also possible with the reheat option. The chiller is self contained with a pump system fitted. A quick fit modular rubber pipe-work system using Camloc connections is fitted fast and is above all reliable.

The controls section of an ACS Climate Control Unit



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CASE STUDY # 5

The Olympic Excel Fleet Depot HVAC Project

A Full HVAC system was installed serving a temporary staff breakout area built for the games



Inside the breakout area. One of the 400mm supply air socks



Offloading the truck on the ramp and positioning with a fork truck



The completed installation- the air handler, spiral ducting and chiller can be seen

ACS were approached by SMP Building Services Consulting Engineers to supply specified hire equipment to the project that was under design. A complete new rest area for the Olympic Fleet staff was to be constructed from scratch in the underground car park area at the Excel Centre London.

A temporary on- hire heating, ventilation and air conditioning system was required along with a suitable distribution system. An ACS 160.120 climate control air handling system was specified along with a water chiller and air sock distribution. The air handler was deliberately oversized to provide the required volume of air at lower velocities, reducing noise.

A 110kw rental water chiller with on-board pump was supplied to provide cooling as required. 100% fresh air supply was used- filtered at the AHU. Air distribution from the AHU was in solid spiral ducting feeding 3x 25mt 400mm internal fabric air socks.

The system was installed over a period of 2 days and was in operation for 3 months.

The system ran reliably 24hrs a day throughout the duration of the project. Regular service visits were made to check operation- filters were changed as regularly to keep the supply air clean. The loads were very constant in this area due to the high mass of the concrete. Generally heating was required and managed by a single stage (40kw) of the AHU's on-board heating. Cooling ran rarely, even on hot days, proving how efficient thermal mass can be in maintaining a stable building temperature.



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In the athletes tunnel- the 20kw AHU's can be seen



Behind the scenes- the water chiller and distribution system

CASE STUDY #3

The North Greenwich (o2) arena athletes tunnel cooling project.

ACS were contracted by Nussli Switzerland to supply a cooling system to the athletes tunnel connecting the training and main auditorium areas.

Another Olympic project that was specified and delivered at short notice for the games. A tunnel was built to allow athletes covered air-conditioned access from the training area to the arena.

Different systems were looked at including, split PAC, ducted air, and internally fitted air handling systems. It was decided that internally mounted chilled water AHU's would provide the most cost effective cooling system.

Four 20kw on-hire AHU's were installed with a 110kw chiller. Reinforced rubber hose with Kam-loc connection system was used for water distribution. Temperature control was adjustable locally at the air handling units giving the client complete control over the internal climate.

The system operated though-out the games remaining reliable at all times. No call backs were needed to this system.

This type of system is very compact and powerful. The air handlers can be installed directly into the areas requiring cooling. Their high cooling capacity, small footprint and pleasing aesthetics suite them perfectly to this type of work.

The chilled water system was designed to be maintenance free due to limited access during the games. An oversized expansion vessel was fitted to maintain pressure in the chilled water system for the duration



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