



Penmann

Climatic Systems

Concept to Solution

SOLUTION CONCEPT

Do you require
quicker Cooling for
your Products ?
We can help...

Suffering from High
Temperatures ?
We can help...

Need to Control
Humidity ?
We can help...

Need to improve
Energy Efficiency ?
We can help...

Is Air Quality a problem ?
We can help...



Penmann

Climatic Systems

Penmann Climatic Systems have over 30 years experience in the design and installation of turnkey climatic solutions to a broad spectrum of industrial customers. These include Food and Drink, Public Health, Pharmaceutical, Automotive and Textiles.

Utilising our core skills of Design and Contract Management we are able to provide you with a "one stop shop" for the design, installation and commissioning of solutions to process and product cooling, air conditioning, refrigeration, ventilation and extract systems. We are also able to offer a design only consultancy where required.

Penmann's experience and expertise has evolved through many strategic alliances and approved supplier arrangements with "Blue Chip" manufacturers, resulting in multiple repeat orders and the development of close working partnerships.



Air Handling Unit - Cranelift

Under pinning our contract management is a well developed understanding of the Health and Safety requirements of the sectors within which we operate. Coupled to our membership of national professional institutions we are able to offer a seamless professional service.

Summary

- ❖ Established experienced company
- ❖ Core skills of Design and Contract Management
- ❖ Well developed Health and Safety policy procedures
- ❖ Minimum client involvement for maximum result
- ❖ Provide value for money solutions

Our Aim

"Penmann will provide Quality Products and Services on time and every time."



Muller Dairy - Cooling Tunnel



Northumbrian Fine Foods - Biscuit Packing Area



Bath University - Environmental Chamber



Rachel's Dairy - Process Cooling

Concept to Solution

Process & Product Cooling

We have a wealth of experience in providing process cooling solutions working across a broad spectrum of Industrial Customers. Utilising our own mobile test unit, clients have been able to test products "in-situ" either with our technical assistance or using their own in house personnel.

Once an optimum condition is established we will then be able to design a system to meet that requirement.

Solutions range from small batch static manual systems through to full automated bulk handling systems.

Penmann have developed the expertise to undertake all mechanical aspects of the project to ensure a seamless delivery.



Uniq Foods - Multi Lane Cooling Tunnels



Phileas Fogg - Displacement Ventilation



Tate & Lyle - Extract Canopy

Ventilation & Extraction

Throughout the UK, Penmann have been able to utilise their considerable experience and expertise in resolving the latest environmental problems arising from modern production and operational practices. Effective ventilation and extract systems help minimise employee Health and Safety risks and help maximise productivity and output as well as lower energy costs. Penmann have experience in:

- ❖ Full Factory Ventilation
- ❖ Machinery Heat Extract and Recovery
- ❖ Steam Extraction
- ❖ Displacement Ventilation
- ❖ Localised "Spot Cooling"



Dairy Crest - High Care Air Conditioning

Air Conditioning

Working with a solid core of "Blue Chip" customers on an array of projects to meet the individual customers requirements for temperature and humidity, Penmann have established an unrivalled experience providing solutions to meet the problems encountered in production areas such as external contamination and the need for high levels of filtration and room pressurisation. Issues of condensation and the associated problem of cross contamination and the effects on the building fabric and problems with hot spots and fume build-up.

Through systems designed to minimise energy consumption and maximise both free cooling and heat recovery all supported by close control, we therefore ensure optimum conditions are delivered at the best value for money.



Nestlé - Cooling Tower, Cuddington

Refrigeration

Penmann have considerable expertise in the design and installation of a whole range of refrigeration applications ranging from:

- ❖ Process and Product Cooling
- ❖ Chilled Water/Glycol Systems
- ❖ Blast Freezer/Chill/Cold Rooms
- ❖ Cooling Towers/Ice Banks
- ❖ Evaporative Cooling
- ❖ Environmental Chambers



Uniq Foods - Ammonia Refrigeration Pipework

In-house design ensures that systems take into account the latest energy efficiency features such as liquid pressure amplification and electronic expansion valves.



Operating Theatre - Laminar Flow Canopy

Clean Room and Sterile Suites

Penmann have provided a range of systems for controlled clean air environments to the highest quality standards. Systems include:

- ❖ Clean Rooms
- ❖ Sterile Suites
- ❖ Operating Theatres
- ❖ Laminar Flow Enclosures/Canopies

All designed to the highest standard where safety, precision and hygiene are essential.

Process and Product Cooling

Process and Product Cooling is key to the manufacturing process. Rapid controlled cooling will minimise health risks and maximise throughput, provide additional shelf life, product consistency and eliminate product rejection. Automated systems will reduce manual handling and cold storage requirements, therefore saving money.

Product Cooling:

Problem: Muller Dairy the UK's leading yoghurt manufacturer had a requirement to rapidly cool a whole range of palletised product to a dispatch temperature prior to moving to their cold store.

Solution: Penmann designed and installed a fully automated "in line" cooling tunnel to deal with the high levels of production throughput.



Muller Dairy - Cooling Tunnel



Muller Dairy - Cooling Tunnel



McVities - Inline Cooling



Walkers Snack Foods -
Inline Snack Cooler

Product Cooling:

Problem: An international biscuit manufacturer had developed a new product that an existing line was unable to cope with in terms of the cooling capacity and product speed.

Solution: Penmann installed a menu based control system that enabled the easy selection of alternative parameters for different product types.



Avana (RHM) - Cake Cooling



Rachels Dairy - Yoghurt Coolers

Mobile Test Unit

Penmann have designed and built a mobile test unit to enable on site testing of product under a range of temperature, air velocity and humidity conditions to establish product cooling profile.

Problem: With most products you don't know how quickly they can be cooled and also what is the optimum cooling method.

Solution: The Mobile Test Unit can be hired for on site use by you or Penmann offer a full on or off site testing service including compilation of reports on completion.

To date the unit has been used to test a wide range of products:- Ready Meals, Soups, Sauces, Condiments, Yoghurts, Cheese, Butter, Desserts, Biscuits, Cakes, Poultry, Wax Polish, Cosmetic Product, Dishwasher Tablets, Automotive Parts etc.



Mobile Product Test Unit

Concept to Solution

Air Conditioning:

Air conditioning is installed to meet a range of requirements depending upon your process. In High Care Production Areas to meet the stringent health requirements and prevent product contamination. Comfort cooling to provide suitable working environment to employees.

Problem: KP Foods had existing plant serving 2 packing halls in excess of 1350m² with a cooling load greater than 1000kW. The existing system could not meet the cooling requirements and was difficult to maintain.

Solution: The new Penmann Displacement system reduced electricity costs by more than £70,000 p.a. Service and maintenance costs are also significantly reduced. The project had a pay back of 2.5 years.



KP - Displacement Air Conditioning



Golden Wonder - Air Handling Units



Parmalat - Displacement Terminal



Patheon - Clean Room

Clean Rooms:

Problem: The client required a grade C (class 10,000) environment for preparation rooms, air lock and change areas and a Grade B (class 1000) operating environment for the assembly area, with a localised Grade A (class 100) environment within the assembly area.

Solution: Penmann were contracted for the design supply and installation of the plant to serve the new area. The design needed to overcome problems of integration into an existing building with congested service routes. The system was designed with a cascade air pressure from 45 Pa in the assembly area to 0 Pa in the external corridor. Constant air volume was maintained by a combination of frequency inverter control of the fans and in duct constant volume devices to compensate as filters started to block and reduce airflow.

Refrigeration:

Problem: With the advent of the climate change levy and in an ever increasing competitive business world energy savings are vitally important to our customers. The client asked Penmann to upgrade the system (two direct expansion refrigeration plants) that they had installed in 1994.

Solution: Penmann introduced the idea of LPA (Liquid Pressure Amplification) upgrades to existing plant to enable more cost efficient operation. A proposal with a less than 2 year pay back.



Danbys Foods - Soup Cooling System



Burtens Foods - LPA Upgrade



Pork Farms Bowyers - Steam Extract Canopy



Stonegate Foods - Process Chiller



Britvic - Heat Extract/Recovery

Ventilation:

Ventilation systems can tackle a range of issues within the production space from full factory systems down to localised spot cooling, plant room cooling through to steam and heat extract.

Problem: The client was suffering from extreme room temperature in a bottle blowing hall resulting from the high discharge temperatures of process air. The temperature was affecting people and the machinery.

Solution: Penmann designed a solution that recovered the waste heat and re-used it to heat other areas of the factory during low ambient periods.



Britvic - Heat Extract/Recovery

Client List

Arla Foods
Avana (RHM)
Bettys and Taylors of Harrogate
Britvic Soft Drinks
Burton's Foods
Coca Cola Enterprises
Danbys Foods
Dairy Crest
Kerry
K P Foods
Kraft Foods
Glanbia Cheese UK
Grampian Country Food Group
Greencore
Le Pain Croustilliant (RHM)
Masterfoods
Muller Dairy
McVities (UK)
Nestlé
Northumbrian Fine Foods
Patheon UK Ltd
Phileas Fogg
Pork Farms Bowyers
Rachels Dairy
SK Foods
Tate & Lyle
United Biscuits
Uniq Foods
University of Bath
Voridian (Eastman Chemicals)
Walkers Snack Foods



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