Professional Information
Jane Gartshore B Sc F Inst R

Director / owner Cool Concerns Ltd

Jane Gartshore is a graduate engineer and has worked in the refrigeration industry since 1977. This includes time testing, designing and developing commercial refrigeration equipment, working in technical sales and marketing, and carrying out wide ranging training and consultancy work.

Jane set up Cool Concerns in 1991 and developed the business into a successful consultancy and training provider with a wide ranging customer base. Cool Concerns was incorporated in 2003 when Stephen Benton joined as a joint owner and director. Jane is responsible for the marketing of the training and consultancy services, the development of training programmes and the administration of the training centre.

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Qualifications and Professional Affiliations

- B Sc Engineering Science
- RSA Assessor Award
- City & Guilds 2079 Refrigerant Handling categories 1 and 4
- City & Guilds 6127 RAC Technical Certificate levels 2 and 3

- Fellow of the Institute of Refrigeration
- Company membership of the British Refrigeration Association

Jane is immediate past president of the Institute of Refrigeration during which time she developed the effectiveness of the Council and guided the Institute to provide more practical and effective help and information to members and the wider industry.

Jane is currently on the Council of the British Refrigeration Association.

Specialist Areas of Expertise

Jane has general experience of a wide range of commercial refrigeration and air conditioning, with in depth expertise of the following:

- Energy efficiency
- Refrigerant leakage reduction
- Hydrocarbon refrigerants – safe handling and appropriate system design
- Preparation of specifications for maintenance and equipment
- Evaluation of equipment and components
- Preparation and presentation of training courses
- Technical writing
- Commercial refrigeration specification through to trouble shooting
- Selection of alternative refrigerants
- Pressure Equipment Directive compliance
- Evaluation of ozone depleting substance phase out in Article 3 countries.

Career History

Director, Cool Concerns Ltd, May 2003 to date

- Development of Real Zero (refrigerant leakage reduction) guidance (Carbon Trust and industry project)
- Development of energy efficiency guidance (Carbon Trust, FSDF and industry projects)
- Work with UNEP evaluating the success of programmes to phase out ozone depleting substances in developing countries
- Continuing development of training programmes, including those for City and Guilds 2079.

Partner, Cool Concerns, 1991 to 2003

- Development of the business from scratch
- Guidance to end users, contractors and suppliers on reduction of energy consumption of refrigeration equipment
- Evaluation of equipment and components for lowest life cycle cost
- Market evaluations for companies developing technologies and businesses into the RAC industry
- Development and presentation of training programmes, including safe refrigerant handling, service and maintenance and applications engineering
- Preparation of specifications for equipment and maintenance / service
- Development of information to help contractors comply with the Pressure Equipment Directive
- Refrigeration system audits to check service / maintenance contract compliance and to advise on strategies to reduce energy and refrigerant use
- Preparation of training programmes and information for the safe application and use of hydrocarbon refrigerants in the UK and in various developing countries
- Advice on the application of alternative refrigerants and strategies for reducing refrigerant usage

- Expert witness work
- Preparation of articles and guidance on a wide range of refrigeration related topics
- On site trouble shooting.

Director, Practical Refrigeration Training Centre, 1991 to 1995

- Setting up the company from scratch
- Marketing the company to develop a wide customer base
- Development of training programmes, course notes and visual aids
- Development of practical facilities.

Application Engineer / Manager, Copeland Corporation (formerly Prestcold Ltd) 1982 to 1991

- Providing technical support to customers world wide on commercial refrigeration equipment, including trouble shooting and training
- Development of technical literature
- Marketing.

Design / Development / Test Engineer, Prestcold Ltd, 1977 to 1982

- Design, test and development of commercial refrigeration compressors
- Liaison with production facility.

Previous Projects

The following list highlights some of the work already carried out by Jane Gartshore and illustrates the range of work that can be undertaken.

- General training on all aspects of the refrigeration and air conditioning industry, including practical and theoretical training (general appreciation of refrigeration, service and installation skills, refrigerant handling, applications engineering, alternative refrigerants). This has been for UK and overseas service engineers, applications engineers, managers as well as those on the fringe of the industry.
- Preparation of industry endorsed training package for site engineers working on CO_2 systems.
- Development of training programmes covering carbon dioxide as a refrigerant.
- Participation in Carbon Trust funded Real Zero project to provide guidance to industry on reducing refrigerant leakage.
- Training service providers in the USA on safe handling on HC refrigerants.
- Participation in an ongoing Carbon Trust funded project in conjunction with the Food and Drink Federation to reduce the energy consumption of existing refrigeration plant and food and drink processing plants.
- Preparation and delivery of energy efficiency seminars and workshops organised by the Carbon Trust in the UK and SEI in Ireland.

- Preparation of a series of Good Practice Guides for the Energy Technology Support Unit covering the good design, installation, operation and maintenance of commercial refrigeration equipment.
- Work with City and Guilds moderating assessment questions.
- Work as an expert witness in legal cases involving refrigeration equipment malfunction.
- Development of a strategy for a facilities management company to enable them provide cooling solutions for new and existing customers with air conditioning equipment.
- Provision of accurate and up to date information regarding convenience retail refrigeration equipment and its supply and installation for use in the promotion and launch of a novel integrated refrigeration and air conditioning system in the UK for a global supplier.
- Beer cellar surveys for a major brewery to show where energy efficiency could be improved in the design, installation and use of cellars. Training of technical personnel in the basics of refrigeration. Advice on changing to alternative refrigerants.
- Investigation into alternative system configurations for a major importer, for storage and ripening of bananas.
- Investigation into the operation of a central plant system for storing and ripening bananas, to reduce running costs.
- Specification of air conditioning for the kitchen of Broadmoor Hospital to reduce working temperatures.
- Specification of cooling for microwave equipment in a remote area of the United Arab Emirates with no mains power and a very wide range of ambient temperatures.
- Analysis of compressor failures and site trouble shooting for a number of customers.
- Training sessions for a UK refrigeration wholesalers.
- Participation in a feasibility study into the recycling of refrigerant in the Philippines, involving analysis of refrigeration / air conditioning industry and potential for recycling as well as specification of appropriate equipment and systems.
- Preparation and presentation of seminars annually for a major end user of refrigeration equipment covering all issues regarding refrigerant changes and energy efficiency in cold stores, process plant and transport refrigeration applications.
- Technical help to Middle Eastern manufacturers to extend exports of refrigeration products.
- Investigation and advice on replacing CFC and HCFC refrigerants in centrifugal and reciprocating water chilling and direct expansion plant for a major mushroom producer.
- Specification of equipment to reclaim and store CFCs for the MoD.
- Problem solving on the refrigeration equipment for a vapour recovery unit for a petrochemical company, followed by specification of refrigeration equipment for improved performance and reliability and an alternative refrigerant.
- Work on safe application of hydrocarbon refrigerants in commercial refrigeration and air conditioning applications.
- Preparation and presentation of training workshops for the safe application and handling of hydrocarbon refrigerants in the UK, Ireland and Australia.
- Presentation of paper on hydrocarbon refrigerants in Xian, China for UNIDO.
- Presentation of paper on hydrocarbon refrigerants and investigation into commercial refrigeration sector for potential for hydrocarbon refrigerants in India. Outline specification of design and testing of commercial cabinets, and outline of training for technicians in this area.
- Research for and preparation of training manuals for the ECOFRIG project, including the latest publication: Safe Conversion and Servicing Practices for Refrigeration Appliances

using Hydrocarbon Refrigerants. The ECOFRIG manuals were originally for India, but are now used in many other Article 5 countries.

- Training for Arctic Circle on refrigeration technology and the application of compressors.
- Preparation of manual, overhead slides and train the trainer materials (including pre and post course assessments) on safe handling of refrigerants and recovery and recycling for use in West Africa.
- Maintenance audits on cold store refrigeration systems. Specification of maintenance for cold stores. This work resulted in significant savings on overall service costs.
- Various tasks for ETSU including preparation of material for journal articles, following up event leads and quantifying energy savings, groundwork on Good Practice Guides, investigating potential Case Studies.
- Preparation of training course and material to train technicians to repair commercial freezer cabinets in Russia.
- Audits of companies servicing commercial freezers throughout Europe.
- Testing of alternative beer cellar cooling equipment for a UK brewery, and specification of the equipment and its installation and maintenance for minimum lifetime cost.
- Testing of alternative integral retail display cases for a petroleum company, and specification of the equipment and its installation and maintenance.
- Technical support on the initial development of the enhanced capital allowance scheme, including work on the development of the current ECA definitions and incorporated costs, consultation with equipment suppliers and users and presentations to industry groups covering ECAs.
- Preparation of Good Practice Guide 280 (Energy efficient refrigeration technology – the fundamentals) and Good Practice Guide 283 (Designing energy efficient plant) for the UK government's Energy Efficiency Best Practice programme.
- Consultancy work for Somerfield Stores Ltd on the development of a proactive maintenance and service strategy and the appointment of maintenance / service contractors.
- Consultancy work with Somerfield on reducing the environmental impact of their refrigeration equipment, including work on existing plant and the specification of new equipment. This includes reducing the refrigerant loss and energy consumption of equipment.
- Work with a cabinet test house on the testing and specification of retail display cabinets for Somerfield. Multi deck and full height glass door cabinets from seven suppliers were tested to determine the cabinets with the lowest life cycle costs for Somerfield, taking into account capital cost, energy use, service and maintenance cost and disposal of the cabinets.
- Training service and maintenance engineers in all aspects of refrigeration technology for Trembath Refrigeration and Air Conditioning Ltd.
- Preparation and presentation of training the trainer sessions for engineers and lecturers in Jamaica on all aspects of refrigerant usage.
- Work with a number of contractors and manufacturers to help them comply with the Pressure Equipment Directive.
- Evaluation of the operation of refrigeration equipment at a potato store and provision of action plan to improve reliability and product quality.
- Carbon Trust funded work advising on energy use reduction and providing awareness training at the Princess of Wales Hospital, Bridgend.