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the effects of inefficient maintenance in cold storage

7 steps to avoid unnecessary costs

Maintaining peak efficiency in cold store facilities

Food manufacturers, supermarkets and caterers, as well as hospitals and pharmaceutical companies depend on the day-to-day efficiency of their insulated cold store facilities.

Maintaining the fabric of a building's cold storage facility is critical to ensure it operates at peak performance, particularly where perishable items are stored.

Poor maintenance, whether through wear and tear of the fabric or a faulty seal, can result in excessive energy consumption, spoiled goods, increased carbon impact and direct financial consequences that hit the bottom line.

These effects are compounded when storing for third parties, which may involve damage to a company's reputation as well as consequential loss and potential compensation for loss of profits claimed by distributors and retailers.

Food retailers like Morrisons, Costco are dependent on areas with efficient chiller rooms for meat, deli and rotisserie preparation, as well as freezers for bakery products in order to offer a good customer experience. If a cold store cannot be used, the company would suffer considerable financial loss through disruption to trade.

7 key areas to implement that avoid ruining the bottom line and company reputation:

Planned maintenance - the relentless importance of getting it right - first time, all the time

Outright failure of a cold store is rare, but poor thermal performance means they can cost more to operate resulting in unnecessary stress on the refrigeration systems, pumps and compressors. A leak in cold store insulation can compromise cleanliness and hygiene, and ultimately lead to non-compliance in regulated industries. Vaccines and pharmaceutical products stored at the wrong temperature will be non-compliant representing a 100% loss or worse, a serious health risk. It only takes a broken door hinge or seal leading to internal temperatures rising outside required tolerances and none of the stored products can be used. The impact of on patients is potentially life threatening.

So spoilage costs through poor thermal performance, which may have built up as a result of an infrequent maintenance schedule can run into millions of pounds. Alongside of this, a company's reputation, once damaged, can take many years to rebuild.

The key aspects of maintaining cold store efficiency are a planned maintenance programme; refits or refurbishments to improve thermal efficiency; management of emergency repairs; and the appointment of a reputable maintenance supplier that meets all your requirements.

Prevention of loss and spoilage is an important factor which planned regular maintenance of cold storage facilities helps to address.

1. Increased energy consumption affects your ROI

Curbing energy consumption is a major issue for cold store managers. Whereas refrigeration plant and equipment are often well maintained, the structural elements of a building can be overlooked. A structure that leaks air because seals are damaged, for example, is more expensive to run and impacts the facility's return on investment. In a tough environment, with lots of in/out traffic, automated racking systems, use of forklifts, etc you would expect normal wear and tear to hinged or sliding door mechanisms, for instance, but accidental damage can necessitate more serious remedial work such as cold-room re-sealing or panel spraying. In some cases a complete refit is necessary to improve thermal efficiency.

Supermarkets and retailers generally want branch managers to focus on performance and the customer experience, not worry about plant and equipment. Good control means stores can enjoy as close to total equipment availability as is possible and this translates into maximising stock availability for the customers to purchase.

In the same way that a good driver can spot a potential accident and take evasive action before it happens, a planned maintenance programme can prevent insulation breakdown or failure before it occurs. Such an approach obviates the need for further expenditure in the future if the problem becomes more serious.

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2. Management of emergency repairs

When something goes wrong in one of your facilities it needs fixing – fast. You'll need a multi-skilled site team that is expert in emergency cold room repair, with the experience to get your problem fixed first time, without any unnecessary delay. Your supplier should provide out-of-hours cover for a reasonable fee and be with you on-site within one working day. Reputable specialist maintenance suppliers can afford to stock a comprehensive range of materials and parts and their emergency response vehicles are likely to carry core stock items to provide a rapid 'first-fix' solution on site.

Emergency repairs may be straightforward or more complex, from modifying insulated panel walling to replacing a broken door hinge, repairing a track, or replacing a strip curtain. Particularly in the case of an emergency the right choice of supplier is essential, with the experience and accreditations necessary.

3. Preventing business disruption

Today's consumers are demanding. They expect to be able to choose from a retailer's well-stocked shelf. But if your chiller room or cabinet fails and causes supply chain issues, the customers experience is compromised. A failed cabinet can massively disrupt your business, impact the bottom line and damage your brand.

Planned preventative maintenance should include a full audit and thermographic scanning to verify insulation integrity. The results of these audits and scans should be recorded so that any worn parts can be accurately identified and replaced before they fail. Some suppliers can compare individual units within large estates to benchmark performance and highlight common faults. This is often the most cost-effective way of preventing disruption to a business, whilst ensuring optimal efficiency and minimising running costs.

Flexible preventative maintenance programmes are available with different levels of service and may include an annual health check, or thermographic scans to ensure insulation integrity, or a discount on parts, labour and consumable item costs or a number of emergency call outs.

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4. Refits and renovations to improve thermal efficiency

To reduce energy costs and improve the thermal efficiency of a temperature-controlled environment it's a good idea to plan a redesign and refit. This should start with a review to determine whether the existing cold storage space is being used to its maximum advantage; whether there are any failing doors; or whether an old, inefficient building structure/fabric is compromising energy efficiency. It is common for a refit/refurbished cold store to be the better economic option against repair, because it generates rapid ROI purely as a result of improved energy consumption.

A specialist supplier can plan and deliver an improved thermal efficiency project to suit your needs and budget, with minimum disruption to your business, providing an end-to-end cold store solution from plant and panels, to doors to wall protection.

5. Cleaning and hygiene

Suppliers may be called upon to provide specialist services for hygiene-safe environments which may require engineers and technicians to be trained in catering-level food hygiene standards. Such services may include cleaning and sanitising complete interiors, as well as wall and ceiling-mounted plant up to three metres in height.

6. What to look for in a contractor

Selecting a supplier with a proven track record is essential. Good suppliers will demonstrate proper Health and Safety management practices with independent auditing through bodies like Achilles, plus programmes for continuous improvement with key performance indicators.

A comprehensive selection of cold room parts, components and materials should be offered as standard, with modular cold rooms and plant, complete and ready to install a useful addition. In-house design and manufacturing capabilities which produce bespoke cold store panels, doors and trim are best: carrying out repairs is often time-critical and this ensures that customised parts can be produced quickly.

7. Accreditations and experience

Good suppliers have extensive experience of cold store design and construction and the engineering skills to deliver appropriate repair and maintenance solutions. Operational staff should be fully qualified, CSCS carded at a minimum, with MEWPs (mobile elevating work platforms) and PASMA (mobile access tower training) where relevant.

Contract Managers and Site Supervisors should have senior Construction Site Management qualifications plus relevant Safety Training Scheme qualifications - SMSTS or SSSTS. It is also worth investigating how risk assessments are carried out and communicated; what methods and processes are in place to establish safe systems of work, and how projects are monitored to identify changes that may be required. Lastly your supplier should provide a sustainable and environmentally compliant service.

Cold store maintenance helps you to minimise the risk of cold store breakdown or failure. Regular planned maintenance programmes can prevent business disruption, reduce emergency call-out costs, increase energy efficiency, increase financial performance and the overall reliability of your facility.

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