

HSB Risk Management Solutions

# Reducing breakdown, maintenance and energy costs

**Equipment Condition and  
Performance Services**



# Improve equipment efficiency, reduce maintenance and energy costs

We can help businesses to reduce the cost of operating equipment, with potential savings of up to:

**80%**

## **in breakdown costs\***

Our condition monitoring survey can help stop costly unforeseen breakdowns by providing an accurate health report of critical assets.

**50%**

## **in maintenance costs\***

Our health rating software and data analytics can highlight not only faulty assets requiring immediate attention, but also map deterioration of equipment; allowing repair or replacement before breakdown occurs.

**20%**

## **in energy costs\***

Ensure assets operate within their design parameters which can, in turn, reduce energy consumption.

## Industries

### **Education**

Schools, colleges and universities

### **Healthcare**

Hospitals, social care homes, medical laboratories and research facilities

### **Recreation**

Leisure complexes/centres, cinemas, theatres, exhibition/conference centres, amusement parks, stadiums, ice rinks

### **Property management**

Commercial, hotels and residential (high rise)

### **Food and beverage processors**

Processing and packaging

### **Manufacturers**

### **Retail**

Shopping centres, food stores, wholesale/distribution centres

\*Potential savings are illustrative and based on industry averages.

# Our services are split into five key modules

# 1

## Leak detection surveys

A survey which will identify problematic areas and equipment for any leaks, allowing businesses to plan non-urgent repairs into maintenance periods/outages.

### The service

The scope of this standalone service is to identify leaks in systems by carrying out a thorough and impartial assessment of the installed equipment. Using acoustic visualising equipment to locate and image steam, compressed air and gas leaks, our survey will score any identified leaks with individual loss ratings and advise on appropriate rectification timescales.

### The benefits

- Data collected by site surveys can be used to identify problematic areas and equipment
- High resolution imaging allows fast, accurate leak mapping
- Rectification periods allows planning for non-urgent repairs into maintenance periods/outages
- Loss rating scores allow prioritisation of repairs depending on their severity
- Assistance in complying with applicable legislation



# 2

## Leak detection surveys: Steam and compressed air – energy consumption

A survey for steam and compressed air systems which will identify problematic areas and equipment for any leaks, allowing businesses to plan non-urgent repairs into maintenance periods/outages.

### The service

This is a combined service that uses both sonic leak detection and thermographic technologies to identify and rate any leaks present within steam and compressed air/nitrogen systems.

Two surveys are carried out as part of the service. The first survey identifies any leaks and energy losses within the systems, and measures energy consumption for the system over a specific time period. Once all recommended remedial works to repair leaks and defective areas has been carried out, a second survey is performed which includes an additional assessment of energy consumption.

### Accreditation

This service can also be advantageous for businesses who are accredited to, or are seeking accreditation to, ISO 14001 – Environmental Management; the standard for environmental management systems). One of the requirements of the standard is to implement a 'continuous improvement plan' with a key focus on reducing energy costs and environmental impacts.

This service also extends to those who are seeking accreditation to ISO 50001 – Energy Management; the standard for energy management systems (EnMS) as it evidences methods of saving energy and reducing carbon footprint.

### The benefits

- Enhanced service focused on detecting all leaks and areas of energy loss within systems to enable efficient repair
- Use of sonic leak detection and thermography technology to provide detailed analysis
- Identification of any faulty/defective steam traps and heat transfer
- Review of energy usage
- Energy loss report detailing potential savings over 12 months
- Assistance in complying with applicable legislation



# 3

## **Leak detection surveys : Refrigeration systems - energy consumption**

A survey for refrigeration systems which will identify problematic areas and equipment for any leaks, allowing businesses to plan non-urgent repairs into maintenance periods/outages.

### **The service**

This is a combined service that uses both sonic leak detection and thermographic technologies to identify and rate any leaks present within refrigeration systems. Thermographic technology is specifically used to conduct a thermal survey of the heat transfer system to identify any faults or defects.

Two surveys are carried out as part of the service. The first survey identifies any leaks and energy losses within the systems, and measures energy consumption for the system over a specific time period. Once all recommended remedial works to repair leaks and defective areas has been carried out, a second survey is performed which includes an additional assessment of energy consumption.

### **Accreditation**

This service can also be advantageous for businesses who are accredited to, or are seeking accreditation to, ISO 14001 – Environmental Management; the standard for environmental management systems). One of the requirements of the standard is to implement a ‘continuous improvement plan’ with a key focus on reducing energy costs and environmental impacts.

This service also extends to those who are seeking accreditation to ISO 50001 – Energy Management; the standard for energy management systems (EnMS) as it evidences methods of saving energy and reducing carbon footprint.

### **The benefits**

- Enhanced service focused on detecting all leaks and areas of energy loss within systems to enable efficient repair
- Use of sonic leak detection and thermography technology to provide detailed analysis
- Identification of any faulty/defective steam traps and heat transfer
- Review of energy usage
- Energy loss report detailing potential savings over 12 months
- Assistance in complying with applicable legislation

# 4

## **Condition monitoring: vibration analysis**

Our vibration monitoring service can assist in the reduction of unforeseen breakdowns, reduce maintenance costs by highlighting faulty assets that require immediate attention, and map deterioration of equipment to allow repair or replacement before breakdown occurs.

### **The service**

This standalone service focuses on condition monitoring of rotating assets with a thorough survey carried out using vibration analysis technology. Vibration data is collected on site and processed via analytical software which will return a detailed report on the health of each asset using a traffic light system. This will include predicted failure timescales.

Energy consumption and costs can also be reduced by ensuring assets are operating within their design parameters.

Additional information relating to housekeeping and maintenance requirements are included, which extends to business interruption costs associated with asset failures.

### **The benefits**

- Surveys are performed whilst equipment is in operation, preventing costly shut down periods
- Instant analysis of asset surveys means a condition report is provided prior to our surveyor leaving the site
- A traffic light health rating system allows businesses to visually track asset condition
- Data collected over a period of time can be analysed to produce wear rates and provide predictive failure timescales
- Assistance in complying with applicable legislation

# 5

## Asset condition and performance survey

This comprehensive service uses a combined approach to provide asset condition data; with the survey providing a health rating for both vibration frequencies and operating temperatures.

### The service

The scope of this service is a combined approach which uses vibration analysis, thermographic technologies and electrical loading analysis to provide businesses with a health rating for both vibration frequencies and also operating temperatures. Equipment (such as electromagnetic motors) which are allowed to operate at elevated temperatures can lead to its lifespan being drastically reduced. Elevated temperatures can also be an early indication of increased power consumption, bearing failure or degradation of motor windings.

Our reports will provide a combined asset health rating from vibration, thermal and electrical surveys, with recommended remedial works and maintenance requirements, together with further information on potential business interruption costs associated with asset failure.

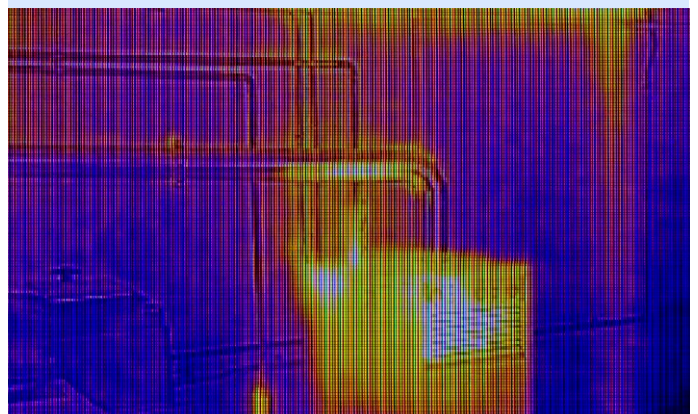
### The benefits

- Potential breakdowns highlighted before they happen
- Ensures assets are operating within their design parameters
- Condition monitoring coupled with thermography
- Analysis of any vibration and heat build up
- Identification of any areas with high energy consumption
- Deterioration of asset conditions flagged, allowing repair or replace decisions to be made before a costly breakdown occurs
- Assistance in complying with applicable legislation

## Case study

A large UK healthcare provider engaged HSB to analyse one of their key sites. With their plant and equipment under heavy use, and with a limited amount of available shutdown periods, failure of the system could have resulted in an overwhelming strain on the facility; impacting patients, staff and the visiting general public.

HSB's specialist, in-house Engineering Consultants carried out a leak survey of their supply systems whilst still in operation, enabling the facility to continue running throughout our investigation. Our survey identified more than 20 leaks of varying severity within the compressed air system. The results of our survey not only enabled the customer to plan and prioritise maintenance and repair, but facilitated financial savings through the repair of leaks that may have otherwise gone undetected until they were unrepairable.



Case study is for illustrative purposes only.

## Why choose HSB?

- A leading specialist provider of engineering and technology inspection services in the UK and Ireland
- Risk management services carried out by our network of in-house, technically-expert Engineering Consultants located throughout the UK and Ireland
- UK-based arm of HSB Group, the equipment breakdown insurance and inspection market leader since 1866
- A member of the Institute of Customer Service, demonstrating our commitment to continually improving customer service performance and professionalism

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Picture credits: Getty Images

This is an overview of HSB's Equipment Condition and Performance risk management services. For full details of the services available and for further information, please contact your local HSB office.

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