

Electrical Thermal Imaging Survey Service Schedule

Support... Planned and contracted maintenance services

To ensure that data centre or building services are always operating to their full potential Workspace Technology recommends the deployment of regular planned preventative maintenance programmes which are backed up with emergency callout for unplanned failures.

To compliment our data centre planned preventative maintenance services we also recommend an annual Electrical Thermal Survey which is detailed within this service schedule.

Electrical Thermal Imaging Survey

Infrared Thermography is non-contact temperature measurement technique and has the ability to see and measure temperature differences in a non-intrusive manner with the use of an infrared thermal imaging camera.

Electrical circuits and components often fail because of fatigue, defective components, contamination, or just loose connections due to poor workmanship. Failing components have one thing in common, they will always have a rise in temperature or 'hot spot' prior to failure. Infrared thermal imaging cameras allow Workspace Technology to quickly identify anomalies before components fail.

Typical faults that the imaging survey will detect include:

- Loose cable connections
- Unbalanced circuits
- Corroded connections
- Internal faults within a circuit breaker
- Internal faults and overheating within a fuse
- Connections with high resistance
- Internal faults or overheating of contactors
- Overheating Lighting circuits

Faults on data centre electrical systems cause expensive business downtime, damage, loss of data or risk from fire. These problems can be prevented by undertaking a regular thermal imaging survey on your data centre electrical systems and equipment.

Systems covered under the Data Centre Thermal Survey include:

- Switchgear
- LV Distribution Boards
- AC Control & Power Panels
- Control Panels
- UPS and battery systems
- Busbar systems
- Electrical Distribution System

The deployment of Workspace Technology's Electrical Thermal Imaging Survey will help stop costly breakdowns by spotting deteriorating components before they fail.

Thermal Imaging Survey Schedule of Works

Frequency Yearly (minimum recommended frequency).

Item	Service Detail
1	Identify and create an "Electrical Components Schedule" of all equipment to be included within the electrical thermal survey. This schedule will include equipment location / reference, equipment type and I.D.
2	Each item surveyed or inspected will be documented together with its average temperature onto data sheets. This allows the item to be monitored and trended accurately during future surveys or inspections.
3	Where faults or problems are detected they will be thermal imaged and photographed to aid identification and detailed on fault sheets which appear within the report.
4	Complete fault sheets which will contain an analysis of the fault or problem, its criteria rating (Low-Medium-Severe) with advice and timescale for corrective and remedial action should it be required.
5	Generate detailed report document to include all thermal data, relevant information and recommended actions.

Additional Data Centre Services

Workspace Technology offers a range of data centre audit and survey services. These services may be specified as result of a Data Centre Audit or included as part of a comprehensive Data Centre planned preventative maintenance and support package.

Service	Details
Data Centre Audit	The Data Centre Audit service is designed to provide a comprehensive review of the existing data centre or server room facility. This review is designed to help identify both good and bad practice and help clients reduce the risk of downtime.
Power Quality Survey	A comprehensive Power Quality Survey & Analysis service is designed to help: <ul style="list-style-type: none"> • Identify and quantify harmonic related problems • To investigate 'flicker', 'sag' and other phenomena • Confirm electricity supply voltage levels • To identify Power Factor levels • Check loads before planned changes to distribution • To record the data needed to assess G5/4-1 compliance
Power Usage Effectiveness (PUE) Assessment	The PUE Assessment enables I.T and data centre managers to accurately benchmark the Power Usage Effectiveness** (PUE), Data Centre Infrastructure Efficiency** (DCiE) and usage of the server room environment through direct analysis of power and energy consumption.
Airflow & Room Thermal Imaging Survey	The Airflow and Thermal Imaging Survey enables data centre managers to identify problems with cooling capacity and airflow efficiency. The survey includes the following: <ul style="list-style-type: none"> • Room assessment and layout plan • Thermal imaging photos of each aisle and photographic images of each cabinet • Air velocity pressure survey (airflow through each 600x600 vented floor tile) • Temperature and humidity check at low, medium and high levels on each aisle • Flow & return temperature and humidity check on the air conditioning units

Further details on audit services can be found in individual audit and survey schedules.

Notes On Audit Schedule

All work mentioned in the schedule is carried out subject to Workspace Technology's Terms and Conditions of sale.

The survey schedules shown are based on a standard and will not be applicable to every installation for every item listed. Consequently each task has to be qualified by the term; "if it is safe so to do", "if applicable" , "if possible" and "if appropriate".

It is possible that your specific installation may have additional or specialised equipment not mentioned in this schedule. In that case, the specific equipment would be the subject of addenda to the main contract.

Tasks mentioned in the schedule may also be omitted if Workspace Technology's engineers or its appointed agents deem that it is unsafe to carry out that task or that it may jeopardise the security of electrical supply.

