



INFRARED - ULTRASOUND

# PREDICTIVE MAINTENANCE & CONDITION MONITORING

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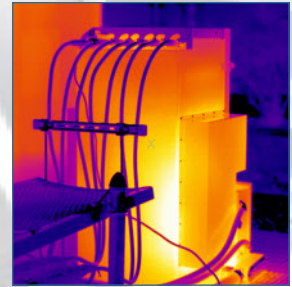
## Risk Management Consultant

Our Aim is your Gain, in predictive condition monitoring techniques. Our experienced consultants can help you uncover dangerous situations at any of your insured clients which may arise with equipment which the naked eye cannot see. Infrared and Ultrasound is a powerful risk management tool, reducing production, equipment, personnel, claims and for purposes. Helping your client maintain there equipment and meeting targets. 30% of all commercial fires are cuased by electrical failure with electrical failure being the biggest cause of unplaned shutdowns. IRTC can perform an inexpensive non contact survey of any electrical, mechanical or building systems preventing untimely shutdowns and expencive repairs.

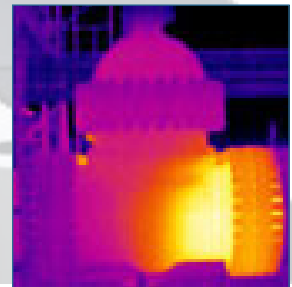
**“Business is a risk how about yours.”**

management tool, downtime, loss in damage to plant property or fewer insurance insurance coverage

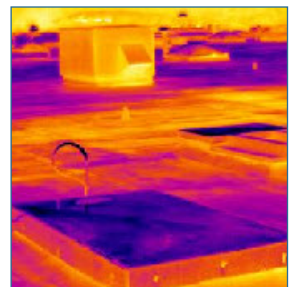
Electrical



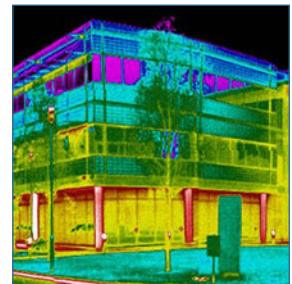
Mechanical



Flat / Sloped Roofs



Buildings



## INTRODUCTION INTO INFRARED THERMOGRAPHY AND ULTRASOUND

Infrared thermography and ultrasound surveys. You've probably heard about these high-tech tools used to spot problems in electrical systems and equipment. But do you really understand the process, and the possibilities that infrared and ultrasound surveys offer to improve safety, operations and and efficiency?

IRTC Infrared Thermal Consultance PO Box 640 Amanzimtoti 4125 Tel: 031 903 5048 Cell: 079 313 5048

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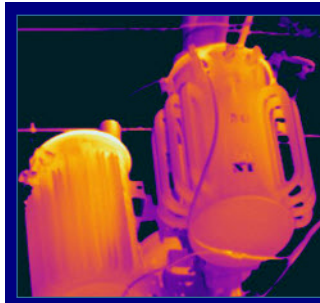




## WHAT THE HUMAN EYE CAN'T SEE

### Peace of mind

Have you checked your equipment lately



Infrared - Ultrasound is most commonly used for electrical inspections.

### WHAT MAKES INFRARED AND ULTRASOUND USEFUL

#### 1. It is non contact:

Keeps the user out of danger.  
Does not intrude upon or affect the target at all.

#### 2. It is two dimensional:

The image or sound allows for excellent overview of the target.  
Thermal or sound patterns can be visualised for analysis.

#### 3. It is real time:

Enables very fast scanning of stationary targets.  
Enables capture of fast moving targets.  
Enables capture of fast changing thermal patterns.

### Building IR



### Building photo



### Finding the "Hot Spots"

Infrared thermography is a non-destructive technique for detecting "hot spots," which are temperature differentials that may indicate problems such as excessive friction, out alignment, oil viscosity, or load imbalance in machinery and mechanical systems. Other uses for this technique include finding defective or leaky steam traps and clogged steamed lines, as well as many other conditions which can lead to failure or energy loss.

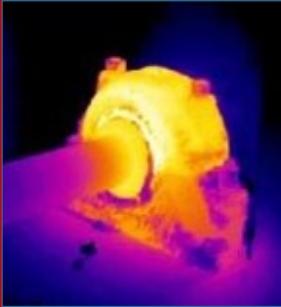
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## Mechanical



Before any failure heat and noise is generated and can be identified with Infrared and ultrasound

## COST BENEFIT

The cost of having a thermographic survey performed can easily be outweighed by the potential failure that can be identified and corrected. A good thermographic survey can identify problems that could lead to overloaded equipment tripping offline or causing a fire. Motors and pumps can have potential bearing problems or shaft alignment problems identified before a motor burns up and has to be totally replaced instead of a minor repair performed on the motor. In most cases when a single problem is identified the potential loss if that equipment was to fail would easily cost more than the thermographic survey plus the remedial maintenance.

By having an active thermographic predictive program as part of the maintenance program, the findings can help save companies money and time by helping to eliminate unplanned equipment outages and costly repair costs, not to mention business disruptions.

In these days of 24/7 continuous operations, performing a non-invasive thermographic survey under normal operation will help eliminate potential problems and help maintain the uptime level of the facility.



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## APPLICATIONS

- ▶ Electrical inspections in buildings, plants, facilities, refineries.
- ▶ Thermal heat loss inspections for buildings, plants, facilities, refineries.
- ▶ Moisture contamination evaluations in buildings, condo's, plants facilities
- ▶ Concrete integrity inspections
- ▶ Flat roof leak detection for buildings, plants, facilities
- ▶ Power generation generator inspections.
- ▶ Power Plant boiler flue gas leak detection
- ▶ Substation Electrical inspections, transformers and capacitor evaluation
- ▶ Overhead urban and rural distribution electrical inspections
- ▶ Electrical motor inspections, mechanical bearing inspections
- ▶ Heat ventilation air conditioning equipment evaluation
- ▶ Cold Storage cooling losses.
- ▶ Refinery process line insulation loss or leak detection
- ▶ Heat exchanger Quality and efficiency evaluation
- ▶ Furnace refractory (insulation) inspections
- ▶ Pipeline inspection, leak detection, stress corrosion cracking areas
- ▶ High Voltage Aerial Electrical inspections for transmission lines
- ▶ New and second hand machinery
- ▶ After claim base line verivcation of repair



## Reports and Documentation

Reports are offered as digital copies in PDF format, e-mailed directly to you, or if you prefer we can burn a CD and mail it to you. Hard-copies that are color laser printed and professionally bound are also available at an additional cost. After completing our work, we provide you with an electronic PDF format report within 24 hours after the inspection, or on site for any critical anomalies found. Reports are based on the following items:

- Written summary of the inspection
- Complete inventory list of equipment inspected
- Color thermograms of problems detected

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