

INTRODUCTION

Flat roofs are the most common form of protecting industrial and commercial buildings. However, flat roofing systems have a limited life and lack of maintenance shortens this still further.

One of the biggest problems with flat roofs in particular is that there is often a considerable distance between the actual source of a leak and the point where it becomes apparent internally. Repairs to the membrane are often carried out immediately above this point, and thus miss the actual source of leakage altogether! A thermographic survey enables the precise location of wet insulation (and therefore the source of the leak), allowing repairs to be accurately targeted.

If leaks are left undetected, then further deterioration of the roof can occur. It is often the case that a full re-roof is undertaken in desperation - just to solve persistent leakage problems. Roof replacement is both costly and highly disruptive, and can often be avoided if a thermographic inspection is employed. Past experience has shown that many roofs are replaced when less than 20% of the roof is actually wet. If thermography is used to locate these areas then localised replacement of the insulation, together with re-treatment of the membrane, is often sufficient to extend the life of the roof for an additional ten years or more.

HOW THERMOGRAPHY HELPS

Infrared Thermography, or thermal imaging as it is sometimes known, provides a cost effective and accurate method of detecting wet insulation within flat roofs. It works because the areas of wet insulation have a different density and thermal conductivity to the surrounding, dry, areas. Figure 1 shows that during the evening, when the thermographic survey is carried out, the surface temperature of the roof is higher above the damp areas due to a combination of stored solar gain (because of the increased density) and increased heatloss (as a result of higher thermal conductivity). The relative effect of these two factors varies according to the time of year, and in conjunction with each other they allow thermographic surveys of flat roofs to be performed throughout the year.

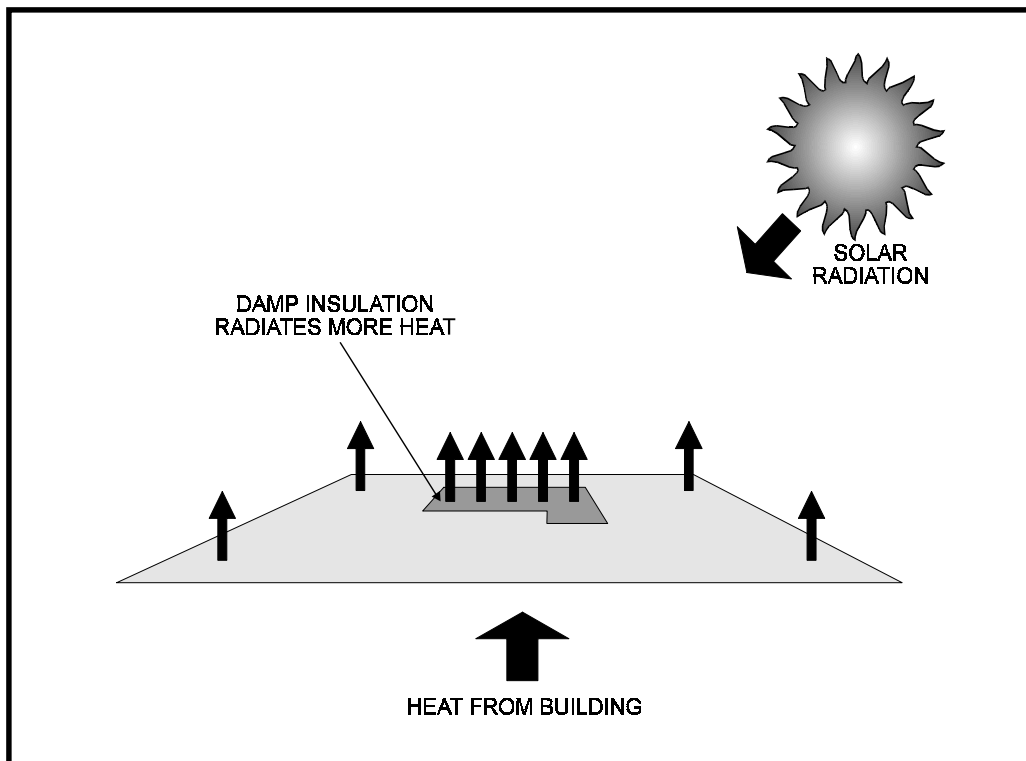


Figure 1 - Differential absorption / transmission of heat through damp insulation.

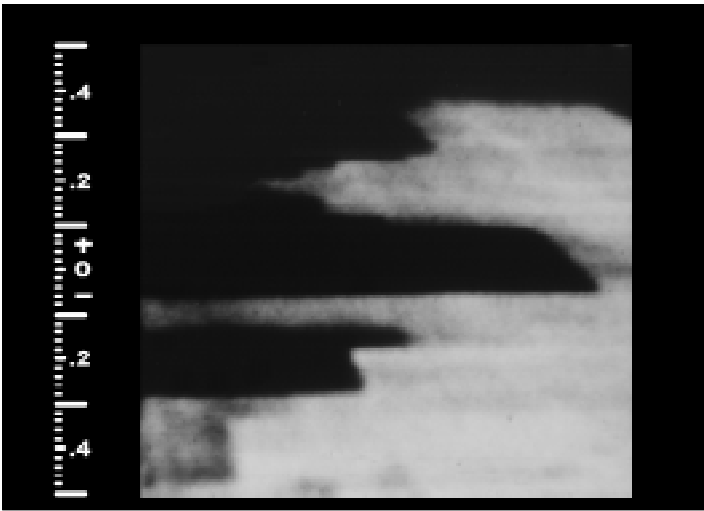


Figure 2 - Typical thermogram of roof fault

Infratech offer a comprehensive survey service. On completion of the survey we present our customers with a comprehensive report tailored to suit their requirements. This may include the following:

- 1 Monochrome thermograms (as shown in Figure 2)
- 1 Colour thermograms
- 1 35mm photographs of defects
- 1 Drawing showing location of defective areas (see Figure 3)
- 1 Core samples
- 1 Details of existing roof construction

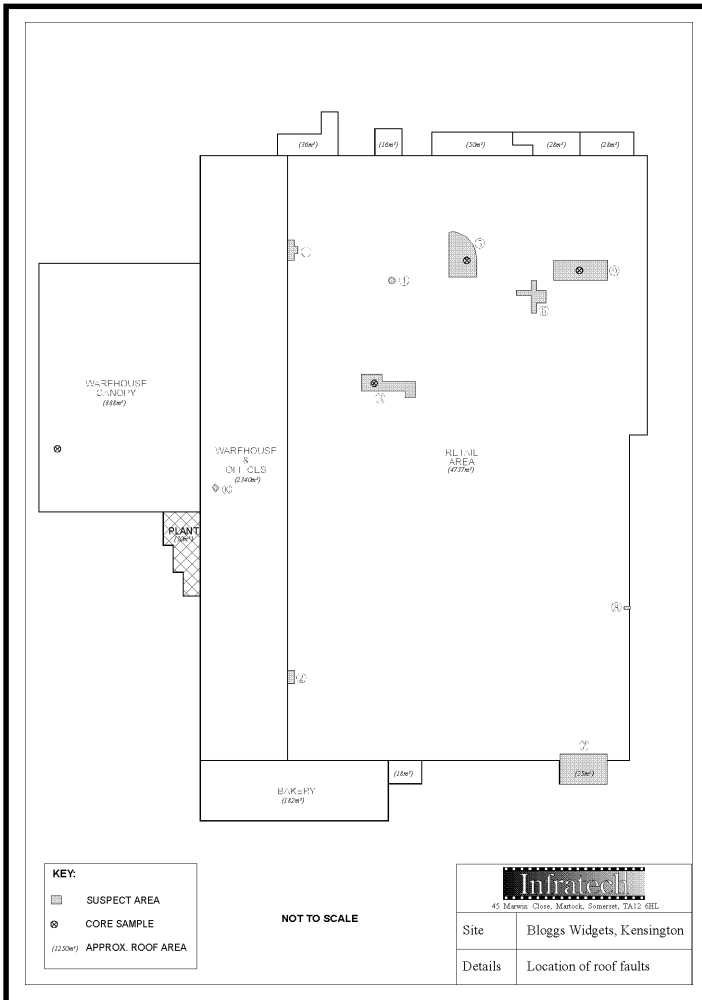


Figure 3 - Typical drawing showing defective areas

Our surveys are priced on an individual basis and are highly cost-effective - for example a typical 10000m² roof can cost as little as 10p per square metre. The potential cost savings are enormous, and may be up to £50 per square metre if roof replacement can be avoided!

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