MAYFIELD THERMOGRAPHY CONSULTING SERVICES
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AITscan FAQ

The Following Q&A discusses Aerial Infrared Imaging of Flat – or – Low-Slope Roofs:

Q1) Why not just walk onto the roof to perform an infrared roof moisture survey?	**A1). Why not just fly over it and perform the survey? No site access problems, no ladders required, no image perspective problems, no trouble moving about the roof levels or other obstacles.**
Q2) What type of roofs <u>does not</u> lend themselves to aerial infrared inspections?	**A2). Standing-seam metal roofs do not lend themselves to aerial infrared inspections. Other flat or low-slope roofs that have highly reflective coatings sometimes pose difficulties.**
Q3) Do aerial infrared surveys have to take place at night? Why?	**A3). No. They don't have to, but the conditions are generally better and more reliable because the major source of distraction (the Sun) is absent. Also, air traffic is lower, as are wind speeds and turbulence levels.**
Q5) What special equipment is required for aerial infrared surveys?	**A5). A very reliable aircraft, a high-resolution infrared camera with appropriate mount and the best digital recording equipment available. Having a high-resolution camera with 512x512 focal plane array detector (262,000 pixels), with a low-resolution recording medium defeats the purpose of retaining all the detail necessary to conduct a good analysis of the roof problems. Computerized moving maps with Global Positioning System (GPS) inputs is highly desired in order to quickly and accurately locate the many building roof targets that comprise an aerial infrared survey mission. (Note) In addition to the specialized equipment outlined above a highly skilled pilot is needed to fly low, slow and in the middle of the night.**
Q6) How do weather conditions affect an aerial infrared survey?	**A6). The same weather conditions that positively or negatively affect a walk-on infrared inspection apply to aerial infrared surveys. We look for a calm, clear night after a day with good solar radiation levels. We can accept less than perfect conditions because the camera we use is so capable. Any time of year will work, as long as there is little rain water, snow or ice on the roof surface.**
Q7) Is a baseline required to generate a positive result?	**A7). No. Even if a report from a walk-on infrared inspection or a previous aerial infrared survey is available; it may be out of date or of poor quality. We ask for and gratefully accept any and all information available concerning the roof, including: roof type, age and materials of roof construction, known leaks or leak areas and previous visual, infrared and other technical inspection results.**

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Q8) How do Mayfield Thermography Consulting Services and AITscan use CAD drawing to support customers of aerial infrared surveys?	**A8). In our opinion, CAD drawings are the ultimate form of data that we can provide to the customer for his direct use in quantifying the roof problems and locating the areas that need further visual inspection and repair. These drawings, when verified, create a great bid document for hiring a roofing company to repair damaged areas of the roof(s).**
Q9) How often do you recommend an aerial infrared survey be conducted on a roof?	**A9a). As an integral part of an overall roof asset management program, we recommend all new roofs receive an initial inspection to insure they were not closed up wet and a follow-up inspection after approximately six months to make certain that the roof was properly installed. This timing regime will help the building owners with acceptance, bond, warranty and insurance issues.** **A9b). Owners, operators and tenants of existing buildings can benefit from aerial infrared surveys of their roofs every couple of years. Once the faults that were discovered in an initial aerial infrared survey are repaired, follow-up surveys will discover new problems when they are quite small and relatively inexpensive to repair. This regime of inspections has repeatedly shown substantial savings in roof maintenance costs over the life of the roof, as well as helping to as much as double the service life of the average industrial flat or low-slope roof.**
Q10) Are there any other points that you think people would like to know about aerial infrared roof moisture surveys?	**A10a). Aerial IR surveys are fast, efficient, effective and safe. For single building roofs over 100,000 square feet, the cost is comparable, or less expensive, than a walk-on infrared survey and the results are superior. For multiple smaller buildings in a city or county area, an aerial infrared survey can be completed in one night in a fraction of the time it takes a ground-based team. We have quite a lot experience with walking roofs, since that was the method we used until 1996.** **A10b). Perhaps the biggest advantage of aerial infrared is not its use on roofs that have well-defined areas of moisture at all, but those roofs that are the most difficult to image from any distance or angle. I am referring to the roofs that, for instance, have a lot of ballast, are covered with reflective coatings or ones that for whatever reason are impossible to image from the roof. With high-resolution aerial imagery, slight nuances of temperature can be seen from far enough away to actually see the pattern of heat!**