

D & S Engineering was founded in 2003 to provide common sense engineering services for our clients. Our services include engineering studies, engineering design, project management, construction oversight and resident engineering assistance.

Most of our staff members have from 20 to 40 years of combined experience in engineering and management. Our Professional Engineers (PEs) are licensed in 21 states stretching from Maine to Texas and as far west as Idaho.

Our team members are skilled in mechanical, civil, structural, electrical and process engineering as well as in process controls and energy optimization.

In working with our clients our overall goal is always to meet their objectives for scope, cost, constructability, schedule and project performance.

D & S Engineering, Inc.

A Common Sense Approach



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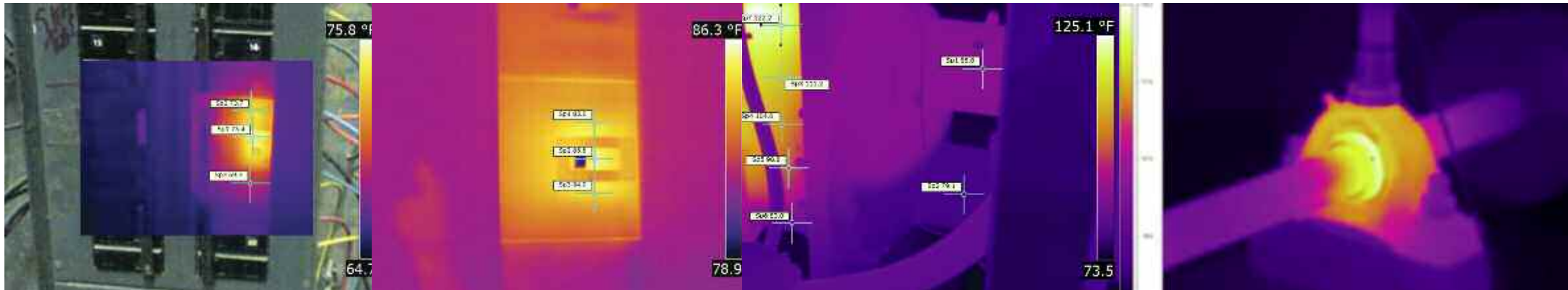
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THERMAL IMAGING

“A Commitment to Cost Effective, Common Sense Engineering”

MILLINOCKET, MAINE



Thermal Imaging Has Many Engineering Applications

At D&S Engineering we're using thermal imaging to find and correct problems in the electrical systems of buildings. For example, a thermal image can quickly show whether or not the electric load on a circuit is equally balanced over all three phases. The "before" picture on the left (above) shows that the middle phase in this circuit is operating at a higher temperature than the other two phases.

The "after" photo (second from left) shows the heat signature of all three phases after the faulty breaker was replaced with a new breaker. Notice that the heat signatures are now equally matched indicating that the load is balanced.

Thermal imaging using infrared photography is one of the proven tools available to engineers. At D&S Engineering we use thermal imaging as a non-destructive inspection tool to verify proper construction of walls and to make sure insulation has been properly installed... even after the walls are covered.

With thermal imaging you can actually see inside the process to look for problems. The second image from the right (above) is a heat exchanger for a chiller showing the inlet, outlet and main body. The heat exchanger is doing its job but, there is not enough flow to make the unit efficient.

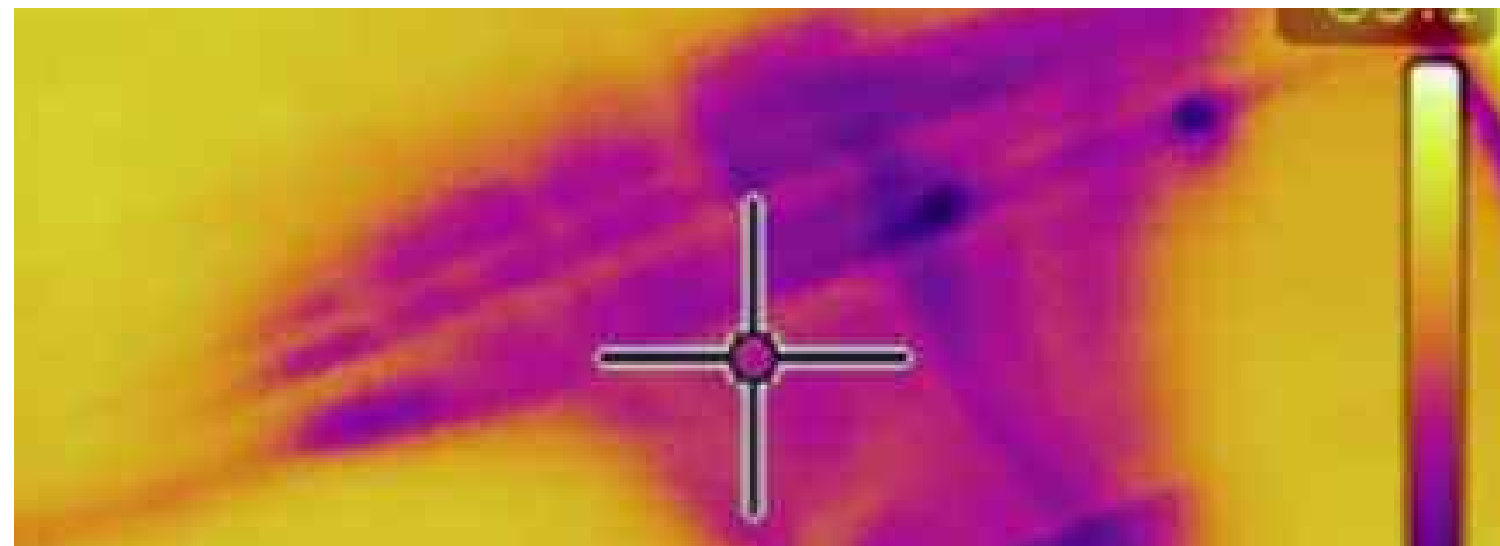
Thermal imaging also helps maintenance professionals get a new look at old problems. For example, a thermal picture can tell whether a bearing needs greasing or has too much grease. The image above on the far right is a bearing that has been over greased and is showing overheating.

Thermal Imaging Helps With Electrical Designs

A "whole building" approach is one of the best ways to maximize the energy efficiency of a building. The indoor environment of buildings can be compromised by many things including:

- poor insulation throughout the building
- moisture that causes mold
- poorly sealed windows and doors
- inadequate or poorly sealed ductwork
- plumbing leaks and other plumbing problems
- Heating Ventilation and Air Conditioning (HVAC) problems.

The picture below shows cold air leakage from the air conditioning duct system.



At D&S Engineering Inc. we always use our "common sense approach" to engineering, and we're always looking for better ways to serve our clients.

We now offer thermal imaging, and we have a fully certified Level 2 Thermographer on our staff.

Thermal imaging can help with green energy improvements by finding the cause of energy losses before corrections are made. This technology saves money for our clients because it enables us to provide an engineering solution that is targeted to a specific problem.