

## “Confronting Call-backs”

### **Poor comfort and high utility bills are never a “bonus” in room over garage**

These rooms are very common in our market, and are unique from a building science perspective in that they are surrounded by unconditioned space on five of their six sides. Very often a single duct run is extended the length of the floor/garage ceiling beneath to the opposite wall, which proves inadequate to the elevated heating and cooling demands of the space. HVAC contractors and insulators are commonly brought in to address the issue, and can end up pointing fingers more toward each other than toward a workable solution to a homeowner complaint. EnergyLogic employs a range of diagnostic home-performance tools in these situations that can quickly identify the problem and re-establish this area as a comfortable and satisfying living space.

**Infra-red cameras** can assess both the amount of heat loss in the duct below and the amount of heat that is being wasted throughout the space itself. If the duct can be seen to lose much of its heat during the course of its run through the floor joist, then inadequate insulation in that bay will be investigated as a contributing factor (this can be diagnosed through “probing” the bay to inspect the insulation, as well). Similarly, the camera will indicate if there are thermal gaps in the room’s envelope – whether through air leaks or inadequate insulation – which would increase the room’s heating and cooling load beyond the effectiveness of the ductwork. In both cases, increased insulation and air tightness – in the joist bay or in the room itself – can often solve the problem.

**Flow hoods and duct blasters** address the issue of the amount of conditioned air that is getting to the space. A flow hood is a device that measures the amount of air coming out of the supply register, and it can determine – when combined with load calculations – whether the volume of conditioned air is appropriate for the room. If the volume of air is too low, adjustments must be made to the HVAC system to increase airflow. These modifications can include increasing the flow of the entire system, or using dampers to provide proportionately more conditioned air to the under-served space. If a leaky overall duct system is suspected as a source of poor air flow, a duct blaster can measure the overall system leakage and determine whether duct sealing is an appropriate response. EnergyLogic can suggest solutions based on these factors and others, including the location of the HVAC system, the shading and orientation characteristics of the room, and the pressure balances between supplies and returns throughout the home.

-Ken Slattery