In multifamily work, PEP frequently encounters concrete-block party walls connecting the living space and attic. Warm air rises through the block cores, is cooled in the attic, and falls again. Whether the block is open or closed to the attic, this robbs heat from the house and chills the wall. Easily treated in new construction with a course of solid block at the ceiling level, block party walls are a challenge to retrofit. In the photo, PEP cures a related problem—leakage between the party wall and wood framing.

Soffitted ceilings are popular in kitchens and baths and make a handy home for recessed lights. But don’t expect the fiberglass batts above to stop air leakage into the attic from the soffit and the adjoining spaces, which can be extensive. In the photo, the ceiling of the soffit has been sealed by PEP with an air-barrier material, curing the problem at the source.

In hot-air systems, contractors can save money by using stud cavities for return-air ducts. This is fine if the cavity is sealed off from unconditioned spaces. Here, however, the return duct is open to the attic through wire holes and gaps in the framing, allowing cold air to be drawn into the system. Also, since this is a bathroom wall, moist interior air is likely to be drawn into the framing as well. The solution is to seal off the duct space so it functions properly.