

Building Inspectors Focus on Ground Source Systems

by Peter Tavino PE, CGD

At our monthly Connecticut Geothermal Association meeting, we welcomed **WWGR** as a new partner in promoting geothermal projects, and our speaker was the new head of the state Department of Construction Services. He spoke with installer members about the role local building inspectors have in the ground source heating and cooling system process.

As the state's top building inspection official, he observed that geothermal regulation is a local issue covered both by the health and building departments. There is a draft, but not yet a state-sanctioned geothermal code passed by the legislature. Building inspectors have been issuing mechanical and electrical permits for the interior heat pump and circulator pump equipment. Health departments issue well drilling permits for boreholes. Some building inspectors consider the loop field part of the heat pump system, and ask for completed application forms and fees (usually \$10 per \$1000 of cost) for the drilling portion. These fees may be paid by the heating contractor or the drilling contractor, and ultimately the property owner. With the fee comes an inspection, and coordination to possibly not cover trench manifold work until it has been inspected. This added activity can slow down, delay, and increase the cost of a geothermal installation, with little benefit to the experienced loop installer.

Building inspectors are generally not trained in how ground source heating and cooling horizontal or vertical bore fields are constructed, but some training has already begun. The association members see building inspectors as potential allies who can promote geothermal, and talk up its advantages to the townspeople who may ask for their (unofficial) advice, but only if they are properly informed about the best

geothermal practices. Relating horror stories of failed systems by inexperienced installers hurts geothermal.

Inspectors do ask for, and receive ACCA J or ACCA N [Air Conditioning Contractors of America]

load calculations, and heat pump tonnage sized accordingly, as with any conventional system. But building inspectors do not, and there is not an industry desire for them to opine on adequacy of ground exchange depth or length. Nor do they measure soil cover depth, or check pipe diameters for reverse returns. From inside the building, they have been known to see documentation that the loop holds pressure, and some delve into performance basics.

Member contractors informed the state official that one town requires a professional engineer's stamp on all geothermal systems and asked if state statute allowed it. The answer was the local jurisdictions can impose the condition, and someone else noted the town requires a PE (professional engineer) stamp on all heating and cooling designs, not just geothermal; but again, an added expense is incurred, sometimes to an unsuspecting bidder, where regulation varies from town to town. (The role of professional engineers in geothermal design and inspection will be a topic of a future **WWGR** article.) We asked if we could request an official "interpretation" of what local regulation should entail, but interpretation requests are answered for technical, not policy issues.

Members also rightly claim they work with their heating, refrigeration, plumbing, and well drilling licenses, and IGSHPA [International Ground Source Heat Pump Association] certifications, and do not need someone watching "over their shoulder" (including home energy raters as well).

Actually, health department inspectors are in a better position to assist with outside loops, because of their expertise in well drilling, septic system drainage, and site work permitting. Since they issue the permit for the borehole well anyway, having the building inspector involved seems redundant. Health department sanitarians, technicians, and engineers already understand installer responsibility, claims, and construction expectations outdoors. Our industry might be better off if health departments continue to permit boreholes, and building inspectors continue to permit activity within "buildings" and not the ground beyond the building and beyond their expertise. They will be busy implementing the new energy conservation code and increased costs of blower door testing etc. until proper training is complete (or if health department personnel prove unable). Building inspectors could benefit our industry by taking more of a disinterested, less regulatory role.

Peter

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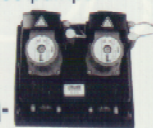
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