

Plumbing

Listed in this section are the technology findings that directly or in part could be applied to the mechanical infrastructure (plumbing) of housing.

Hot Water Recovery and Heat Capture

Oak Ridge National Laboratory, Buildings Technology Center, is researching emerging technology to

Technology Scanning

One of PATH's major research support services is PATH Technology Scanning. *Technology Scanning* tells us about technology developments in other industries, from other nations, from federal laboratories, and from other building sectors. PATH looks for breakthroughs in other industries that could be transferred and applied to housing. *Technology Scanning*—published by the U.S. Department of Housing and Urban Development/PATH and prepared by the NAHB Research Center, Inc.—are updated as technology developments dictate. The Research Center works to unite technology developers from outside of residential construction with manufacturers in the residential housing sector.

This issue of *Technology Scanning* is one in a series. Each issue in the series falls into one of the following categories:

- Design and Internet Tools
- Safety
- Surfaces and Interior Finishes
- Building Envelope Technologies
- Electrical
- Plumbing
- Heating, Ventilating and Air Conditioning
- Energy/Power Systems Generation
- Basic Materials
- Information Technology
- Sustainable Design Strategies
- Materials Recycling and Reuse
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- Indoor Environmental Quality

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capture heat from residential drainwater. Gravity Film HX (GFX) is the process being tested at two sites in Duluth, MN, and Madison, WI, to capture and reuse the heat from shower and dishwasher hot water for pre-heating of additional hot water (63 percent of the hot water use in a house). This technology could save a portion of the energy use in hot water heaters today.

A second project by this group is an integrated water-heating refrigerator. This uses the excess capacity and heat produced by refrigerator condensers for other uses in the house.

- Mode 1 - takes heat from the refrigerator's condenser and applies it to pre-heat water and air; and
- Mode 2 - when no refrigeration is needed, condenser heat is applied to water and a second evaporator is used to cool air space.

Benefits include reduced energy to produce hot water, extra space heat, and a reduced cooling load in summer. A prototype has been built and testing is underway. It is a joint effort between ORNL, North Carolina State University, and Davis Energy Group.

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Plumbers Training Program— Low Cost Solar Water Heating

Solar water heating solutions have been around since the 1960s. Oftentimes the builders' reluctance to adopt them has prevented more widespread use of this technology. A UK company has developed "SHINE 21," a major new project aimed at low-cost training of plumbers in the design and installation of solar water heating systems. This program is being put into use in the UK for skilled craftspeople. The company that developed the program also sells and markets low cost solar water heating systems, which cost around 1500 British pounds or about \$2,100 U.S.

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Versiloc Tubing

This technology is a proprietary combination of silicone elastomers in a high strength pressure tubing. Smooth, inner surfaces are intended to reduce particulate build-up. It is temperature resistant to -112°F and 320°F. It is taste and odor free. This technology could have application in residential plumbing and movement of water.

Contact:

Saint-Gobain Performance Plastics
Phone: 973-696-4056
www.tygon.com

Hot Water and Heating Comfort

MonoSolar is a sleek, well-designed system for hot water. A European design, it is compact and small. It can be connected to the company's Multisolar unit and other Daalderop heating units for central heating or extra heating. The Monosolar unit has 100-litre capacity, is easy to install, has an integrated drainback system, has frost and overheating safeguards, requires no antifreeze in cold climates, requires no maintenance, and has a long life span.

Contact:

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www.daalderop.nl

Join Copper Pipe Faster

Pro Press system, a joint development by Ridgid Tools and Viega, forms a permanent, watertight seal in just seconds for common copper pipe sizes. There is no soldering and no sweating of joints, which is better for the environment. Additionally, it has faster installation time per run, per house. Each fitting, over 200 available, has a seal built in each end. There is also a special elector-hydraulic crimping tool developed by Ridgid that crimps the fitting and seals it to the pipe permanently.

Contact:

Ridgid Tools
Phone: 1-888-743-4333
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