

# BUILDING WITH THE POWER OF PLASTICS



Today's plastics can help architects, owner/managers and specifiers to meet sustainability goals for new and retrofit building solutions in commercial, residential and infrastructure construction. Advanced continuous insulation, sealants, windows, doors, siding, flooring, roofing, foundations, decking, and piping made with advanced plastics can dramatically improve energy efficiency, reduce waste and CO<sub>2</sub> emissions and help us to do more with less... This is building with the power of plastics.



## Energy Use Reductions

**Continuous rigid or spray foam plastic insulation** can help achieve up to 50 % energy savings. Spray foam and sealants block energy-wasting air-loss, saving up to 20 % on heating and cooling energy costs.\*

**Plastic housewrap and sealants** can reduce the infiltration of outside air into the average home by 10 to 50 percent reducing energy needs.

**Polycarbonate or acrylic skylight glazing** can capture natural daylight, reducing artificial lighting consumption in commercial buildings by up to 50 percent.

**Insulated concrete foundations** provide the benefits of concrete with built-in layers of foam insulation inside and outside the wall. Plastic extends the life of the concrete foundation by diminishing rot and rust.



## CO<sub>2</sub> Reduction

**Vinyl window frames** require three times less energy to manufacture than aluminum window frames, saving the U.S. 2 trillion Btu's and its associated emissions in one year.

**Spray foam (SPF) roofing systems** can reduce the time and labor of old-roof tear-offs, reducing landfill waste and the energy and emissions needed to remove and haul the debris.



## Waste Reduction

**Recycled content in roofing, decking, flooring and carpeting and padding** create material efficiencies and reduce energy use and waste with equal product performance and maintenance.

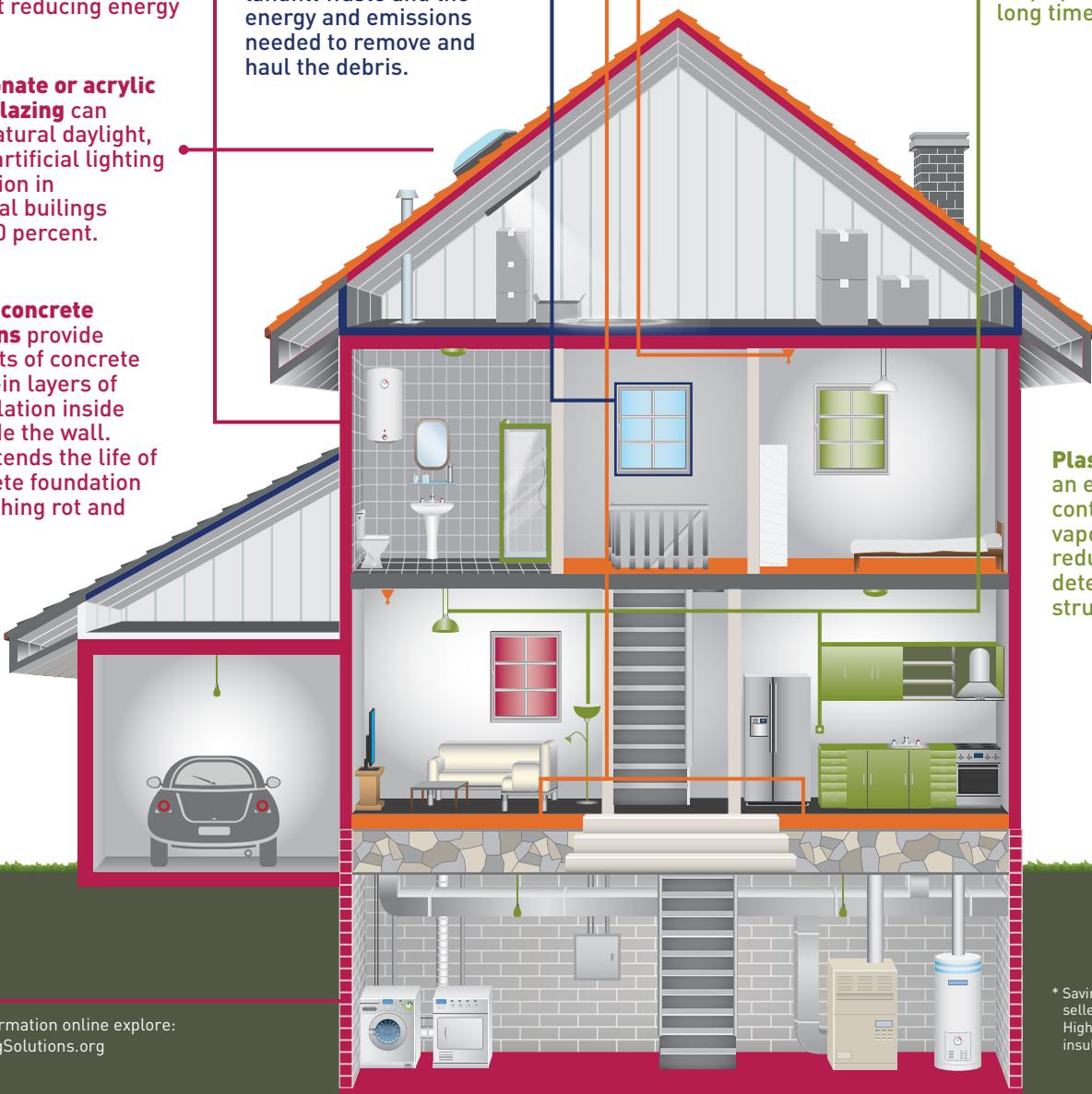
**Plastic pipe sprinkler systems** help prevent fires, plus corrosion resistance helps assure longer performance life.



## Material Use Reduction

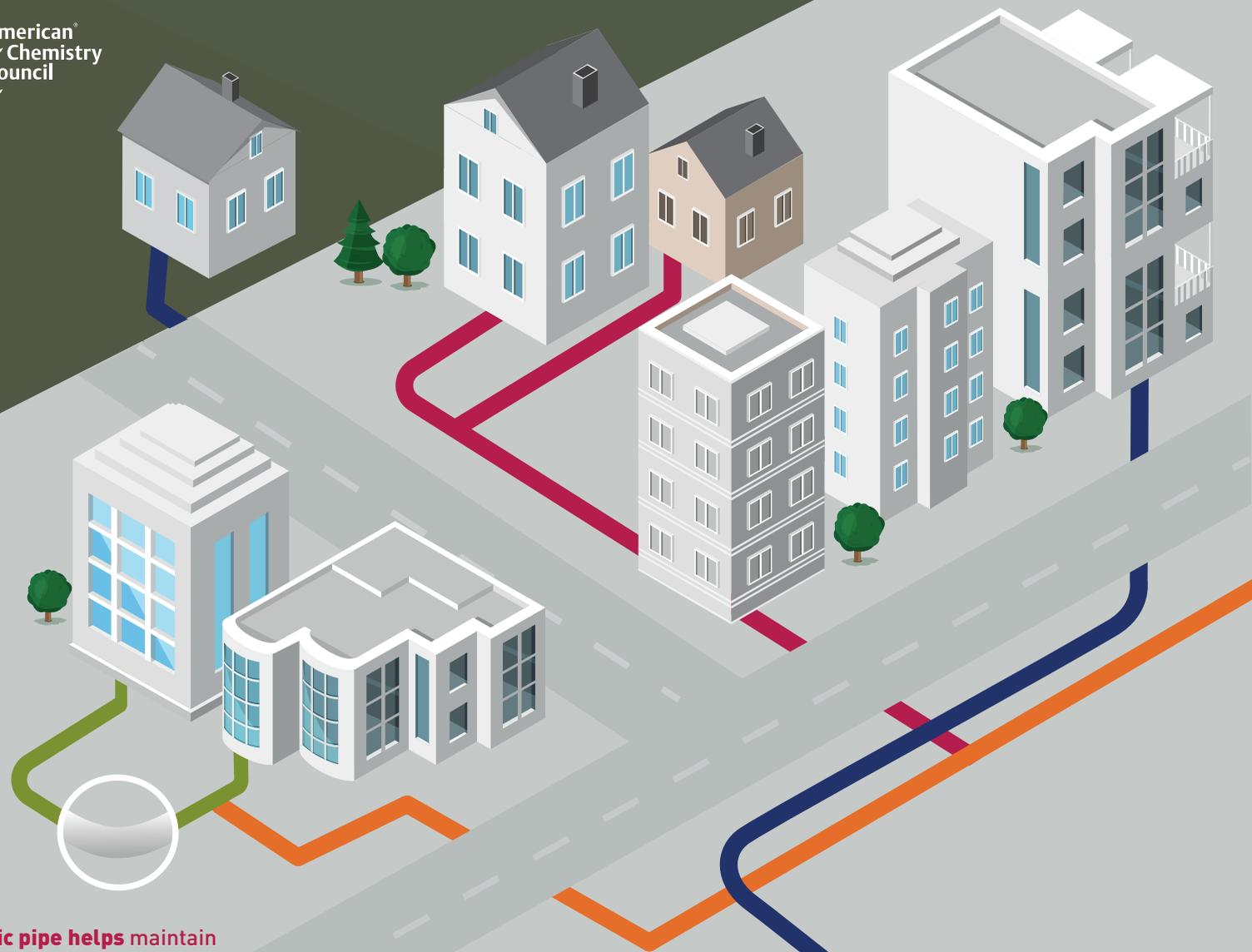
**Polystyrene beads in concrete** reduce weight and improve poured concrete's flexural strength, helping to resist crack propagation.

**Plastic insulated electrical and communications wiring** can be inherently fire retardant plastic. The durability of plastic electrical components helps products last a long time.



**Plastic** can be an effective and continuous air and vapor retarder, reducing material deterioration and structural damage.

\* Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power.



**Plastic pipe helps** maintain water temperature saving energy and attendant emissions keeping hot water hot and cold water cold.

**Infrastructure Plastic Pipe** can be virtually leak-proof and can offer long service life, low break rates, flexibility, and resistance to degradation caused by moisture, corrosion and soil conditions – which can reduce long-term replacement costs.

**EPA estimates** 3 to 4 percent of national electricity consumption, equivalent to approximately **56 billion** kilowatts (kW), or **\$4,000,000,000** for electricity is spent in pumping drinking water and wastewater services each year.

**Plastic pipe** reduces propane use, the emissions, materials, time and labor necessary to cut, deburr, sweat and solder traditional pipe.

**Plastic pipe** resists occluding rust corrosion and plaque buildup saving energy needed to pump water through municipal, county and state pipes.

**Trenchless pipe** laying can reduce traffic and its emissions and reduce business and pedestrian obstructions during infrastructure repairs.

**Flexible pipe** installations reduce the need for multiple T-fittings and elbow- connectors.

**Plastic pipe** can provide greater flex than other pipe materials. Workers easily lay it in place or, pull it through existing pipes.

**Tens of millions** of pounds of post-consumer vinyl are **recycled** annually.

**Flexible Plastic Pipe** can bend to a radius 25 times its diameter which can eliminate significant fittings required for changes in a pipe direction and layout. Less coupling means less waste or leakage and the energy and emissions to replace these losses.

**Plastic pipe joins** enable continuous pipe over significant distances further reducing the risk of leaks.



**Energy Use  
Reductions**



**CO<sub>2</sub> Reduction**



**Waste Reduction**



**Material Use  
Reduction**