

2014 ComTAG Technologies and Strategies

Topic	E3TNW ID	Technology	Short Description
Daylighting	513	Daylight Redirecting Film	3M window-film on exterior windowpanes that redirects daylight up towards the ceiling and requires a diffusing film on the interior pane, but does not require maintenance like light shelves
	515	Daylighting Sails	Skylights with "sails" that help redirect more light into occupied spaces
	514	Engineered Window Louvers for Daylighting	LightLouvers with curves engineered to redirect daylight from angles 5 to 85 degrees up to 60 feet into a building without glare
	143	Fiber Optic Daylighting	Light lamp fixtures in a building's interior with rooftop collectors that use parabolic mirrors or fresnel lenses to enable sunlight to travel through fiber optics, potentially sharing hybrid fixtures with electric lamps
	118	Mirrored Light Pipes	Translucent pipes that collect light from outside a building or from an artificial light source and conveys the light to locations within a building where it is needed
Envelope	290	Aerogel Insulation	A translucent material with an insulating value exceeding R-10 per inch that can be used in windows, skylights, and translucent walls
	427	Air Curtains at Building Openings	A thin curtain of conditioned air blown down just inside of exterior doors that keeps outside air from blowing into commercial buildings when doors are open
	520	Dual Building Envelopes	Also known as double-skin systems, a building envelope that provides improved insulation and enhancing natural ventilation
	262	Electrochromic Windows	Windows that can be controlled to modulate heat gain, light transmittance, and glare from the sun
	474	Insulated Cellular Blinds	Window shades that incorporate a "honeycombed" cross section with air-trapping pockets that add an insulating layer to help save energy
	287	Insulated Vinyl Siding	Siding material with a backing made from extruded polystyrene foam that improves insulation value and durability
	229	Phase-change Materials	Insulation materials impregnated with phase-change materials that increases thermal mass and improves energy efficiency by up to 30%
	263	Super Insulated Thermochromic Windows	Highly insulated (R-5 or higher) windows with coatings that automatically tint glazing during hot weather
	419	Thin-Film Electrochromic Retrofit Coatings for Windows	Window coatings retrofitted to existing windows that can vary solar heat gain, increase daylight, or reduce glare when the voltage to these thin films is adjusted
Natural Vent.	521	Bouyancy-driven Ventilation	Facilitate controlled stack effect by utilizing the differences in density of interior and exterior air, rather than depending upon the wind to drive natural ventilation
	522	Notify Occupants to Operate Windows	Monitor interior and exterior temperatures and alert occupants via computer to open or close adjacent windows to optimize natural ventilation
Other	482	Professional Wet Cleaning	A process of using water and specialized equipment and detergents to clean "dry clean only" garments, using less energy
	471	Vertical Transportation (Elevator) Efficiency Improvements	Passenger and freight elevators with efficiency improvements such as gearless permanent magnet synchronous motors, traction belts instead of steel ropes, and motors with regenerative braking
Plug Load	381	Add Circulating Pumps To Reduce Block Heater Loads	Reduce energy consumption of standby generator block heaters by incorporating circulation pumps rather than relying upon convection to circulate warmed fluid
	127	Airblade Hand Dryer	An electric hand dryer that delivers filtered air at roughly 68 cfm and 400 mph at the nozzle while using less energy than comparable methods of drying
	512	CO2 Laundry Machines	Washing machines that use liquid CO2 at 700 PSI, which has lower viscosity and surface tension, using no water and half the energy with a payback of 2-4 years
	161	Copier of the Future	Specifications for photocopy machines that are significantly more aggressive than ENERGY STAR®
	438	Heat Pump Clothes Dryer	Residential and commercial clothes dryer that employ heat pump technology
	511	Intelligent Outlets	ThinkEco Modlets that plug into outlets and provide plug load energy use measurement and wireless programmable control, minimizing wasted use and vampire loads and raising occupant awareness of energy use

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Water Heating	40	Commercial Heat Pump Water Heaters	Removes heat from the immediate or outside atmosphere and transfers it to the water heater's water tank
	293	Commercial/ Industrial CO2 Heat Pumps	Air- or water-source heat pumps that use CO2 as a refrigerant and can produce hot air or hot water while simultaneously generating chilled water or air
	292	Heat Pump Water Heaters for Commercial Kitchens	Heat pump water heater or reverse cycle chiller designed for use in commercial kitchens
	523	Occupancy-responsive Hot Water Recirculation	Activation of hot water recirculation when someone enters the bathroom so warm water is available when needed without running faucet or shower unnecessarily
	526	Use waste heat from commercial buildings for residential use	Utilizing waste heat from energy-intensive commercial buildings to pre-heat water for use in adjacent residential buildings
	416	Wastewater Heat Exchange System	Equipment that uses wastewater as a heat-exchange medium for pre-heating domestic hot water or for space heating and cooling
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Design	518	Bundle energy saving technologies for use with ultra-low energy use buildings	Compile a list of technologies and strategies for each commercial building energy system that designers may consider to achieve ultra-low energy use buildings
	245	Certification for Commercial Building Energy Auditors	A method for credentialing energy professionals performing energy audits and assessments of commercial buildings in order to improve their effectiveness
	235	Educating Installers in New Technologies	Increasing the education of installers and industry professionals about selected emerging technologies and utility incentives to increase adoption rates of these technologies
	525	Encourage ZNE Districts	Encourage the development of districts (such as college campuses) that can achieve zero net energy use as a group, though individual buildings may not, and encourage community-scale renewable energy
	516	Incentivize ultra-low energy use	Provide annual incentives for achieving proven ultra-low energy use in a performance rather than prescriptive approach by setting goals for each building and accounting for fuel-switching
	328	Innovative Behavior Change Techniques	Educate and motivate occupants, O&M staff, energy managers, designers, and service providers to change their behavior and decision-making strategies in order to achieve greater energy savings
	196	Integrated Design Strategies	A design strategy that considers interaction and synergy among energy systems in order to maximize building energy efficiency and cost effectiveness
	340	National Sharing of Custom Project Lessons Learned	A national database of custom energy efficiency projects and energy efficiency assessment projects that is easily accessible and shares projects from which to learn
	524	Provide energy assessment and retrofit guidance for specific building types and climates	Provide tools and data for a range of commercial building stock to make selecting and retrofitting of buildings easier and cost-effective
	517	Require sharing of energy use for benchmarking and setting performance targets	Compile more detailed information about actual energy use of various types of commercial buildings to facilitate more accurate energy use benchmarking and goal setting in utility incentive programs
	519	Share ZNE Case Studies	Develop case studies of successful Zero Net Energy commercial buildings and share widely so more designers and owners are informed