



water energy solutions



## Water and Cost Savings for SSI High Efficiency Fixtures

US Hotel worksheet

Site Name Your Hotel  
Date completed 24-Jan-08

### Building information

Number of rooms	200	Enter your values into the gray boxes
Number of bathrooms	200	
Average guests	2.0	
Total guests	400	
Annual occupancy	85%	

### Utility information

Water and sewer cost, per 1000 gallons	\$10.00	/1000 gal (nominal value)
Hot water energy cost	\$10.0	/million BTU's (ten therms or 0.95GJ)
Hot water cost per 1000 gal at 140F	\$11.91	/1000 gallons

### Fixture information

	Toilets	Bathroom faucets	Shower heads	Kitchen Faucet Aerator	
Number of fixtures	200	200	200	200	
Uses/person/day	5	2	8	1	
Existing fixture type (nominal)	1.6gpf	2 gpm	2.5 gpm	2.2 gpm	
Actual fixture water use (gal/use)	1.6	2.0	2.5	2.2	gpf or gpm
SSI High Efficiency Fixtures	0.8/1.6gpf	0.9 gpm	1.5 gpm	1.2gpm	
SSI fixture water use	1.0	0.9	1.5	1.2	gpf or gpm

Dual flush toilets average 1 gal/flush (three out of four flushes are 0.8gal)

Bathroom faucet water use is based on two minutes per person, per day and one third being hot water

Shower water use is based on one eight minute shower, and three quarters being hot water

Kitchen faucet water use is one minute, per person, per day, and one third being hot water

Water usage numbers are based on industry standards and US EPA statistics for water use

### Water and Cost Calculations

	Toilets	Bathroom faucets	Shower heads	Kitchen Faucet Aerator	Total	
<b>Standard Fixtures</b>						
Building daily water use	3200	1600	8000	880	13680	gal/day
Building annual water use	992800	496400	2482000	273020	4244220	gal/yr
<b>SSI High Efficiency Fixtures</b>						
Building daily water use	2000	720	4800	480	8000	gal/day
Building annual water use	620500	223380	1489200	148920	2482000	gal/yr
<b>Reductions</b>						
daily water use reduction	1200	880	3200	400	5680	gal/day
daily hot water use reduction	0	293	2400	133	2827	gal/day
Annual water use reduction	372300	273020	992800	124100	1762220	gal/yr
annual water cost reduction	\$3,723	\$2,730	\$9,928	\$1,241	\$17,622	\$/yr
annual hot water cost reduction	\$0	\$1,084	\$8,870	\$493	\$10,447	\$/yr
<b>Total annual cost savings</b>	<b>\$3,723</b>	<b>\$3,814</b>	<b>\$18,798</b>	<b>\$1,734</b>	<b>\$28,070</b>	<b>\$/yr</b>

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