

Saving water and energy with modern tap wear technology without reducing comfort of living

Domestic hot water heating accounts for 14% of total EU-27 households' energy use at residential homes.



Source: Odyssee indicators, www.buildup.eu

It is well known that a large energy saving potentials have remained untapped, although a technology exists; and water saving is one of easiest ways for hot water heating energy savings. In addition to heating energy, the water is extremely crucial natural resource, so the water saving has much wider meaning. Water efficiency is well recognized in green building sustainable construction certification systems such as LEED, BREEAM, DGNB and others, where reduced water flow rates are required among other issues for better ratings. This article introduces modern tap wear technology solutions and products already available today by Oras for effective water use.

EU-27 households' energy consumption at residential homes, %.

Single lever faucets with flow and temperature limit button

The choosing of single lever faucet instead of two handle faucet is the first step to reduce water consumption in all premises. Modern single lever faucet offers more possibilities to avoid unnecessary water consumption; an integrated eco-button will cut maximum flow so that the water flows from the faucet with 75–90% of the maximum flow, depending on the place of consumption. The eco-button does not restrict one from taking the maximum flow, if needed. The same eco-button is used with washbasin faucets and shower faucets to limit the mixed water temperature.



Stylishly integrated eco-button:

- To get maximum flow, you have to press the button.
- To get really hot water, you have to push the button – safe for small children.

Eco-button: safety and water/energy saving function.



A small limiting screw in the lever axel is turned to adjust maximum water flow. Adjustment can be made individually, based by the user's needs or to fulfill flow demands.

All Oras single lever faucets are manufactured with multifunction cartridge. The unique construction of Oras cartridge allows the restriction to maximum water flow.

The Oras cartridge together with restricted aerator keeps the usage of the faucet comfortable. Water flow limitation with only low flow aerator causes risk of cross flow to pipe system in the building. Cross flow is harmful when hot water enters cold water side. Oras single lever faucet with restricted aerator and synchronized cartridge meets most of the green building demands of water saving flow rates e.g. LEED requirements.

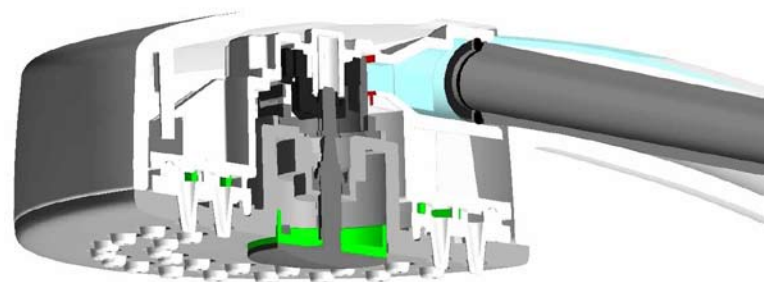
Showering with 38°C water all the time is possible with thermostatic faucet, Oras Optima. Unnecessary adjusting of temperature saves water every time a person is taking a shower. The thermostatic cartridge reacts in supply water's temperature changes and maintains the mixed water temperature at wanted level. Eco-button eases the saving of water; it limits the water flow about 60% of maximum flow. By pressing the eco-button the handle can be turned to full flow, if needed.



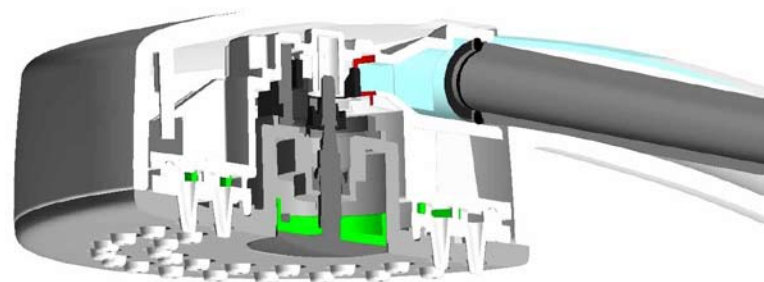
Oras Natura with Oras Optima:

Full flow on at
300 kPa 14,4 l/min.

Eco-button on at
300 kPa 7,5 l/min



A



B

When **eco-button** is used, green indicator ring is visible and water supply channel to strainer is partly blocked (A). When eco-button is in normal position, the supply channel is fully open (B).

Showers with down to 5.5 l/min flow rate

Oras Natura ecological hand showers revolutionary eco-button cuts water consumption to 50% with a single, simple click. It is proved that without compromising showering pleasure: Oras Natura still provides an enjoyable and relaxing shower experience as claimed in idényt-magazine test, where Oras Natura was announced as sovereign winner (see the full article at www.idenyt.dk).

The design of strainer is the key issue in nice water flow perception even with less amount. The water flow stays wide and the water is spread evenly to every nozzle by carefully designed water paths inside the hand shower. Nozzles are designed to spray a stream, not drops which user can't enjoy. For green building flow requirements, Oras thermostatic faucet is equipped with flow regulators. Then together with Oras Natura shower, it can reach as low as 5,5 l/min at 300 kPa eco-button clicked on and 7,5 l/min at 300 kPa eco-button clicked off.

Testing place	Faucet model	Water consumption litres / person / cycle			Saving- %	Saving- %
		Cold	Hot	Total		
Airport	Single lever	0,58	0,60	1,18	40	37
	Electra	0,33	0,38	0,71		
24 h Service station	Single lever	0,37	0,62	0,99	30	44
	Electra	0,34	0,35	0,69		
Hotel	Single lever	0,56	0,63	1,19	31	43
	Electra	0,45	0,36	0,81		
Kinder garden	Single lever	0,76	0,63	1,39	48	40
	Electra	0,34	0,38	0,72		
Hospital surgery	Single lever	0,77	0,85	1,62	44	53
	Electra	0,50	0,40	0,90		
Public toilet	Two handle faucet	0,71	0,79	1,50	48	41
	Electra	0,31	0,47	0,78		



For green building requirements Oras Electra is suitable also as a metering faucet. Maximum flow is 0,56 l per 8 seconds cycle.

Prevent wasting of water in public premises

A significant part of water consumption involves waste-running of water and/or turning off the faucet for the time of washing when water usage is not necessary. Due to laziness, or just an old habit this appears to require an effort. In public places the consumption of water is not a personal cost; on the contrary typically unlimited amount of water can be used. The correct choice of faucet can prevent such wasting.

Oras Electra technology offers faucets and showers to minimize waste-running of water and are thus especially suitable for these points of water consumption. In washbasin models water flows only when hands are washed. In showers, the faucet closes when the user leaves shower. Oras Electra cannot be left on, not in purpose or by mistake. Additional water and energy saving innovation is the fixed flow rate. As standard; Oras Electra's maximum washbasin flow is 6 l/min and in Oras Electra showers 12 l/min. For project demands, Oras Electra washbasin with maximum flow 4 l/min and showers with 6 l/min or 9 l/min are available.

The impact of Oras Electra on water consumption was measured in four different locations. In places located in the cities of Helsinki, Vantaa, Turku and Forssa, single lever faucets were replaced with Oras Electra models. The consumption of water was measured for a month before and after the replacement. The results of water and energy savings are convincing: water saving accounted for 31-51% and the energy used for heating the water, 37-53% per each time of use.

Private households

For private use Oras Electra is a simple solution for saving water and energy. Water runs only when it is needed, like automatic stop and start function in a modern, ecological car. Fixed water flow is set to 6 l/min.

Combined faucets are an excellent example of modern technology for private houses. Touchless part of the faucet gives the user an easy hand wash with lukewarm water and traditional part helps with cooking.



Il Bagno Alessi One by Oras, touchless washbasin faucets designed by Stefano Giovannoni.

products & systems



High spout provides nicely room for pots and pans. Separate hot and cold handles give easily water for you needs (cold water is mainly used for cooking).

In private toilets, the touchless function preserves excellent hygiene for hand washing and saves water by preventing unnecessary water usage. Single lever part provides different temperatures for washing face, brushing teeth and using the bidetta hand shower.

How to change old habits?

Technology can help, but cannot do everything. To use water only when one needs it, in the shower it is needed to turn the faucet off, when one applies soap and washes hair. When brushing your teeth or shaving, the faucet can be off. Oras Electra faucet shuts off automatically when hands are removed from under it. In the kitchen, rinsing dishes under running water consumes a great deal of water. With best available products and solutions, saving of water does not mean compromising on personal hygiene or comfort.

In the shower, Oras Eterna helps one to achieve the ideal water consumption. Easily start up the water flow by pressing the EcoLed -press pad. When closing the shower within two minutes a **green** signal light rewards you for taking an ecological shower. When closing the shower after two minutes, a **red** signal light blinks reminding you of water consumption. When reaching three minutes, the **red** signal light starts to blink continuously, reminding you of water consumption. After showering for four minutes, the water flow stops automatically. One can easily close or restart the water flow at anytime by pressing the EcoLed -press pad once. **3E**

