

saving water =



BUSINESS LOGIC

- Appoint a staff member to manage water conservation as part of their daily duties.
- Let staff know that water has a value by regularly communicating the costs of water usage and the financial savings associated with water efficiency initiatives (e.g. monthly reports of water consumption and costs).

awareness

1. Educate staff and create

How to reduce water consumption in the workplace

*based on 2004/05 water consumption

The list is endless but, by adopting a few basic principles almost every business will see a positive return within a matter of weeks.

In today's competitive world, all businesses look to increase profitability. Many workplaces can reduce their water consumption and thereby cut operating expenses through reduced water bills and lower energy costs for associated water use (e.g. heating and cooling). Any business can implement the following series of general measures to aid water conservation and the profitability of their business.

Seven billion* litres per year or 25% of all treated water in Ipswich is used in commercial, industrial, institutional and other workplace environments. Although a large amount of this water goes into air conditioning and industrial processes such as manufacturing and food processing, a significant percentage is also used by staff in amenities, cleaning, gardening and food preparation.

- Check that the water meters are working properly. Keep records (e.g. monthly) of trends in water consumption in different areas of the business and make graphs of your monthly water meter readings. If there are sudden changes, it could be due to a leak in the pipe network.
- Check your bill against the readings.
- Compare your water consumption against established benchmarks such as the appropriate industry best practice averages.
- Implement regular (e.g. weekly) inspection of equipment for leaks or faults. Check for leaks by taking water meter readings during 'downtime' (i.e. periods of little or no water use)
- Gather information about the water efficiency of existing appliances and devices including taps, toilets, urinals, shower heads, washing machines, dishwashers and pressure-reducing valves.

2. Investigate current water use

- Provide staff training in water conservation. Ensure that staff report and act upon leaks and wasteful practices.
- Implement a procedure for reporting and repairing maintenance faults promptly.
- Encourage staff to provide suggestions for improving water efficiency (e.g. through monthly water efficiency meetings).

- Check all water fittings and appliances regularly for leaks and fix immediately.
- Replace old toilet cisterns with 6/3 litre dual flush toilet suites.
- Replace cyclic flushing urinals with waterless urinals or single stall, manual push button flush cisterns or if on-demand controls are preferred, automatic individual sensor flush units.
- Consider installing pressure reducing valves and flow-control restrictors.
- Replace old or broken taps with self-closing, aerated, sensor-operated or ceramic disk taps.
- Install water efficient dishwashers and washing machines and only run automatic appliances when fully loaded.
- Insulate pipes and install hot water systems close to draw-off points to avoid significant heat loss from piping water over long distances and large volumes of water being lost while the cold water is flushed out during draw off.
- Optimise cooling tower performance.
- Investigate possible ways to re-use water for industrial processes.

3. Take action inside buildings



Did you know?

There are a number of simple and effective ways to reduce water consumption in the workplace.

- Operating a standard showerhead with gas hot water costs around \$1,500 over ten years, compared to only \$790 for a water-efficient shower head – a 47% reduction.
- Operating a single flush toilet costs around \$760 over ten years, compared to only \$250 for a water-efficient dual flush cistern – an impressive 67% reduction.



- The average urinal uses about 2.2 litres per flush.
- The most efficient urinals reduce flush volumes to 1.5 litres per flush – a reduction of more than 30%.
- Typical taps discharge 15 to 18 litres per minute but low-flow and aerating models may use as little as 2 litres per minute, depending on the intended application.



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4. Take action outside in the gardens

Water efficient irrigation systems

- Ensure optimum positioning and selection of sprinklers to prevent wasteful overspray onto buildings, roads or footpaths.
- Re-design your irrigation system and scheduling taking into account factors such as site layout, operating pressures, rainfall, seasonal variations, plant varieties, soil properties and climate.
- Use pressure gauges to monitor water mains and sprinkler delivery pressure. Supply pressure should be matched to your irrigation systems. Too much pressure leads to evaporation loss through misting and uneven application. Too little pressure causes poor distribution.
- Investigate the possibility of changing to a more efficient irrigation system. If properly managed and maintained, drip irrigation uses 30% to 50% less water than sprinkler irrigation and usually costs less to install. Since water is applied directly to the root zone, evaporation and runoff are minimised. Drip irrigation systems also use a low pressure, which keeps the soil loose and friable, and retains its essential elements.
- Switch off all automatic irrigation during rainy weather. Or install a rain sensor onto the automatic irrigation system, which shuts sprinklers off in a storm or when it rains, automatically compensating for the amount of rainfall that occurred.

Mulch to reduce evaporation

- Use mulch made from bark and wood chips to keep the ground moist around plants. Mulch reduces the rate at which water evaporates and has the added advantage of controlling the growth of weeds.

Zoning makes sense

- Zone irrigation areas to ensure that plants do not receive more water than they need. Group plants according to water requirements.

Improve the soil

- Use soil amendments such as compost or mulch to improve water holding capacity.

Effective watering

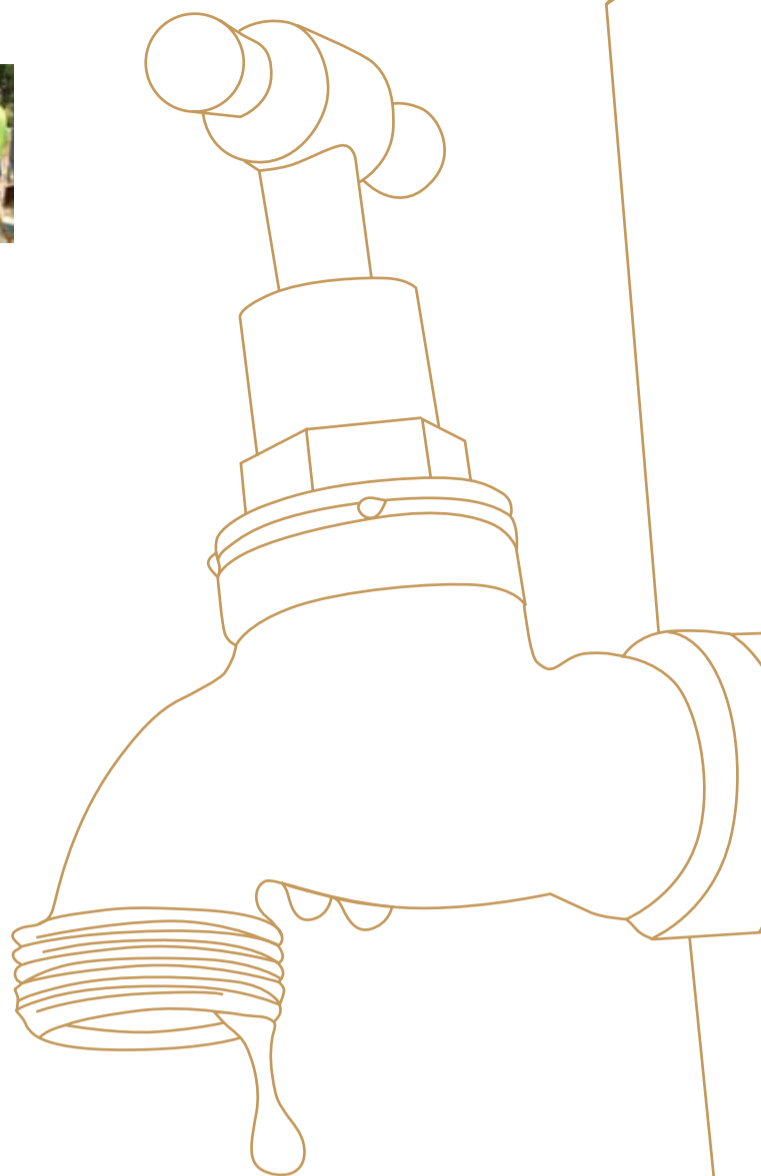
- Water less frequently but more deeply.
- Change watering schedule to take into account seasonal variations.
- Water in the evening or early morning to reduce evaporation.

Choose the right plants

- Promote drought tolerant plants and lawn varieties and water only as required. Local native plants are the ideal choice.

Consider alternative water sources

- Consider filtering, cleaning and recycling irrigation water.
- Investigate the use of recycled water from council's treatment plants.
- Consider the installation of rainwater tanks or the use of rainwater for irrigation.



Fix outdoor leaks

- Repair leaking, clogged or worn pipes, hoses, taps or nozzles. Perform routine maintenance of piping, nozzles, hoses, blockages as per manufacturer recommendations.

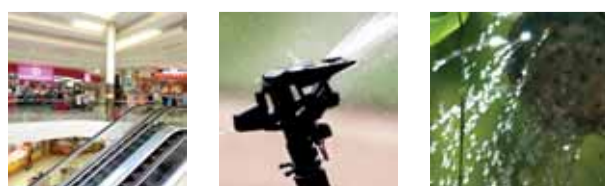
Save Water = Improved Bottom Line

Water has an economic value and by using water efficiently, businesses can lower water consumption costs quite substantially.

More and more, water is being regarded as a precious resource which has the potential to become more valuable than oil.

By increasing water efficiency through using water wisely, every business stands to gain. The most obvious advantage is reduced costs through lower water meter readings. In addition there may also be benefits from reduced wastewater charges (trade waste) where it is linked to water consumption.

Other advantages include developing more efficient processes and operations through taking measures to reduce water consumption. This leads to greater competitiveness as increased efficiency saves time and costs, resulting in better value for money. Also by using less water, there may also be a saving on chemical costs in some instances when treating wastewater, resulting in a cleaner and more sustainable environment for future generations



What is the level of water use (L) per person per day within your business premises?

Work it out with the help of your water bill and this simple formula:

$$\frac{\text{Water used as billed (Kilolitres)}}{\text{No. of employees} \times \text{No. of days billed}} \times 1000 = \text{No. of litres (per person per day)}$$

Note: Do not include the water used in your process as this should be deducted from the water used as billed (KL)

Where do businesses typically use water?

Landscaping	1%
Unaccounted Water Loss (Leaks)	2%
Heating, ventilating or air conditioning	2%
Cooling Towers	5%
Boilers	5%
Wash down of components	5%
Cleaning	5%
Kitchen Use	5%
Staff Amenities	30%
Manufacturing Process	40%

Note: Percentages may vary in different businesses

Water saving, cost and payback period.

There will be costs associated with installing water saving equipment e.g. for water reuse. The question raised is: Will the savings in water charges cover the cost of the equipment? The following formula will calculate payback period.

$$\text{Payback period (years)} = \frac{\text{Cost of installation}^*}{\text{Annual estimated savings}}$$

*It will also be necessary to include interest charges and running costs.

