Water efficiency tips for your business
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LANDSCAPING

Water efficiency is an increasingly important part of landscaping. Advances in design and technology make it easier than ever to maintain healthy and water efficient gardens and landscapes.

The benefits of good planning

Ecologically balanced landscapes conserve resources and money, physically improve property and reduce long-term maintenance costs.

The benefits of planning your landscape include:

- minimising environmental impacts from runoff, pesticides, fertiliser and water consumption
- improving pedestrian access
- keeping nutrients onsite
- reducing energy use and pollution
- reducing water pumping and water treatment
- reducing runoff of stormwater and irrigation water
- reducing maintenance and labour costs
- increasing quality of landscape and surrounding habitat.

Improving water efficiency

Landscape design

A comprehensive design plan is the first step to a water efficient landscape. A well thought out and researched design will minimise costs and determine plant and sprinkler placement. The following factors should be considered:

- site conditions such as drainage, soil type, sun exposure/shade, aesthetic preferences, existing plantings, slope/grade, and water availability
- your microclimate and plants to match
- intended use of the site, including recreation, habitat and traffic

- trees, shrubs and grass all require different amounts of water. Plants should be placed in groups according to their respective water needs. This way an irrigation system can be designed to properly match the needs of the plants, soils and weather conditions
- use of drought-tolerant plants
- place plants with high water demands at the bottom of slopes
- incorporate existing trees, plants and wildlife areas to add value to the site
- create shade areas, which can be 20°C cooler than unshaded areas
- minimise the use of impervious surfaces to help reduce runoff and subsequent stormwater pollution
- use porous materials
- grading and directing surface runoff and rainfall gutters to landscaped areas instead of into drains.

Soil analysis and improvement

- Soil testing will help determine soil quality and absorptive capacity which will inform plant selection.
- Organic matter such as compost, mulch or manure helps soil retain water and nutrients and can improve water distribution. For clay soil, mulches and gypsum promote better infiltration during the summer months and better drainage in winter.
- Adding water-absorbing crystals can also prolong water retention. They help reduce transplant shock to minimise plant loss.
- When improving the soil, it is important to treat a large area around the planting to allow ample space for root systems.
- Do not allow heavy construction equipment to compact soil around trees or other sensitive areas.

Plant selection

- The selection of drought-tolerant plant species will greatly reduce maintenance costs and can improve the presentation of a site.
- Consider the plant's water demand, pest tolerance and soil nutrient and drainage requirements.
- Native species are adapted to work together in similar soils and benefit each other's growth by forming symbiotic relationships.

Efficient irrigation

- Fixed watering systems are convenient and are available with drip, micro-spray or pop-up sprinklers. They can be controlled manually, however a timer is preferable. While timers can be manual or automatic, automatic systems are inefficient if they turn on when it's raining.
- To ensure your system is efficient, invest in rain and/or soil moisture sensors. These devices act as an override facility and trip the power supply to temporarily prevent the system from working when there is enough moisture in the soil. Rain sensors are inexpensive and are a common option for most automatic timers.
- Effective irrigation waters plants deeply, infrequently and slowly. Saturating the soil deep enough to assist root growth is crucial; light, frequent watering will restrict growth. Extra water is required during establishment for most plantings.
- Use electronic controllers with precise timing, multiple irrigation zones, multiple cycles and rain sensors. Automatic systems are a cost-effective way of ensuring that proper watering occurs, although it is important to adjust the system regularly for weather changes and plant growth.

- Trees, shrubs and groundcovers are watered most effectively through drip pipes or sprays that target the root zone of each plant.
- The key ingredient in irrigation efficiency is uniformity of the water application. Sprinkler uniformity is affected by the operating pressure, the nozzle used and the sprinkler spacing.
- Observe the water consumption rates of plants to learn their needs as seasons change.
- Overspray that falls on concrete or other impervious areas is not just a waste of water but can contribute to runoff, pavement damage and pollution of adjacent waterways. Adjust sprinkler nozzles to overcome this problem.
- The excessive or improper use of irrigation systems can severely affect soil nutrition. Nutrients can leach out of the soil and contaminate groundwater or adjacent waterways.
- For facilities such as golf courses and sporting grounds, recycled water offers significant cost and environmental benefits, provided that issues such as nutrients and salinity are appropriately managed.
- Use separate irrigation zones for different planting areas and turf areas.
- Use dedicated water meters for landscaping water use.

Practical turf areas

- Turf grasses have the largest water consumption patterns of any plant group. Plant turf only where it will provide optimal functional and aesthetic benefits.
- Water saving lawns like Palmetto have deep roots that make them extremely drought tolerant. They also do not need mowing as often as other lawn types.
- Whenever possible, plant alternative groundcovers that require less water, or consider the use of patios and decks, further reducing water demand.
- Avoid very small turf areas under 3 metres wide.
- Proper watering of turf (that is, less frequent and deeper rather than frequent and light watering) will promote deep root development and make the turf more drought tolerant.

Mulch

Mulches are various organic materials such as pine/oak bark, pine straw, aged wood chips and compost mixtures that are placed around the root zone of a plant. Mulching can reduce evaporation by up to 70 per cent.

- The use of mulch around plantings is highly effective in retaining soil moisture and reducing the need for watering and maintenance.
- To prevent weed growth, ensure the mulch does not contain seeds.
- Spread mulch evenly up to 3 – 4cm deep to insulate roots from heat and limit the germination of weeds.
- Fine textured mulches help retain more moisture than coarse mulches.

Proper maintenance and watering

The most crucial element in maintaining water efficiency in any landscaped site is ensuring that a regular maintenance schedule is met. Attention to the landscape and irrigation system at regular intervals will reduce the cost of maintenance and increase the effectiveness of irrigation. Adhering to current Smart Water Choices requirements is also mandatory.

- Never mow grass to less than one-third of its original height. Leave grass at two centimetres or higher and maintain this length by cutting off the top third of the leaf area. In dry conditions, leave the clippings on the lawn to keep moisture in the ground.
- Regular aeration of clay soils will improve water-holding abilities and prevent runoff.
- Schedule irrigation to ensure deep and healthy root systems.
- Keep nutrient levels balanced throughout the seasons.
- Once a month inspect and adjust the sprinkler emitters, filters, valves and controllers for proper operation.
- Replace sprinklers with like sprinklers.
- Ensure spray heads are aligned with the grade of the land.
- Replace worn spray nozzles.
- Regulate pressure for system demands.
- Check for leaking valves.
- Inspect low-volume emitters for blockages.
- Adjust sprinklers to water plants, not footpaths or roads.
- Adjust the operating times of the sprinklers to match seasonal or monthly requirements and current Smart Water Choices requirements.
- Take soil samples to look for compaction or thatch build-up.
- Water in the early morning or late evening to maximise absorption and minimise evaporation. This can save up to 25 per cent of water and is a requirement of the permanent water-saving rules. Water when wind is less than 16 kilometres an hour.
- Water only when plant groups are showing signs of heat stress.

Seek advice

For your irrigation efficiency assessments Hunter Water recommends you contact an Irrigation Australia Certified Irrigation Designer - Landscape Turf Commercial Specialist. Visit irrigationaustralia.com.au for more information and to find an irrigation specialist.

For the soils component (for turf and gardens) you'll want a Certified Professional Soil Scientist (CPSS). Head to soilscienceaustralia.org.au/CPSS/ to find one in your area.

Saving water in business

Visit **hunterwater.com.au/savewater** for more water saving tips for your business