

The Spring 2004 Flower Displays

From the Mountains to the Sea

The availability of water depends upon the well-being of our hinterland, of those areas where rain falls, sometimes as snow, and then flows along creeks and rivers to reservoirs and ultimately to the sea.

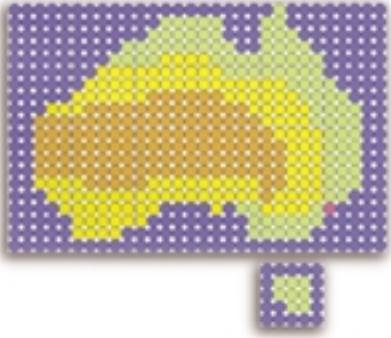
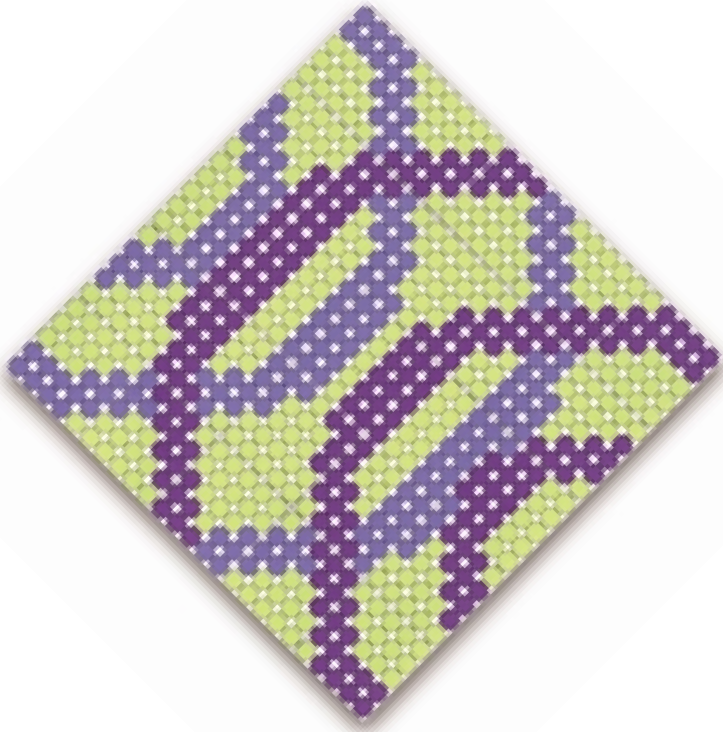
Proper management of catchment areas is vital to the on-going supply of water for our consumption. The protection of forests in highland areas helps reduce erosion, while the presence of trees in flatter country reduces soil salination that damages farming and our fertile country.

This flower display acknowledges the journey that water makes from the mountains through the valleys and plains to the sea, represented uniquely in Sydney by the great harbour. In doing so we recognise the value of our landscapes 'from the mountains to the sea'.

Ebb and Flow

Sydney is a city built against a background of water, offering refreshment, recreation and a stunning setting that contributes untold benefits to Sydneysiders' lifestyle and economy. Sydney's great harbour is recognised and admired world-wide.

The ebb and flow of its tides are the heart-beat of the city and it is this which is captured and portrayed in this flower display, the dynamic movement of waves depicted as one group of ripples interplays with another over the surface of water.



A Harsh Climate

Australia is the driest inhabited continent as is portrayed in this climatic map that indicates our rainfall patterns. Sydney, located in the south-east corner of the country, occupies the relatively moist and fertile edge of the continent, yet even here water is a vital and precious commodity to be valued and conserved. Twenty three percent of domestic water consumption is external to the house, most of which is expended on the garden. With thought and care we can reduce this consumption leaving more for vital needs.

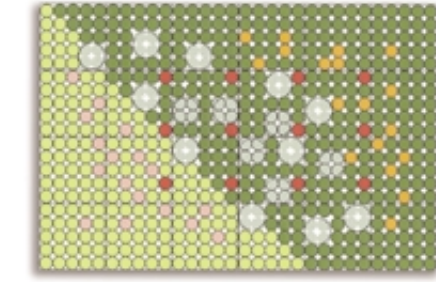
Drought Tolerant

The selection of drought tolerant plants is a major step towards a reduction in water use in our gardens. Combine this with the use of mulches, appropriate irrigation practices and wetting-agents (to ensure water penetration) and we will go a long way to reducing garden water consumption.



Greywater

The drainage spiral is familiar to all. The water that empties from our sinks, showers, baths, washbasins and washing machines is potentially a source of irrigation for our gardens, further reducing the demand on water from our reservoirs. Developing greywater technologies will increase our use of this precious waste water.



Ripple

The patterns created by water droplets landing on a water surface can be fascinating, endlessly mesmerising us and creating a mood of relaxation and contemplation.

On a human level it pays to remember that a small action by one person can have a ripple effect and impact on many lives.



Every Drop Counts

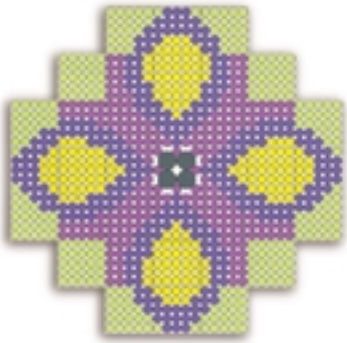
The loss of water through leakage in our pipe infrastructure reduces water available for use. In our home situation dripping taps contribute to the loss. Replacing washers or turning taps off correctly goes a long way to save this water. As the present dry period extends, the value of every drop of water increases.

As the water-saving campaign suggests 'Go Slow on the H₂O'. Check out www.sydneywater.com.au for daily water quality, water consumption and storage levels, and ways to save water in the home, garden and business.

Water Droplets

Water is the world's most powerful agent. Its energies dissolve rock and *en masse* water droplets can scour landscapes changing their form forever. The Grand Canyon is a stunning example of what the erosive power of water can achieve.

Covering 71% of the earth's surface, water is the only material found in solid (ice), liquid (water) and gaseous (steam) states. It is omnipresent and without it there would be no life on earth. Yet its ready supply — when we turn on a tap — means that many of us take it for granted.

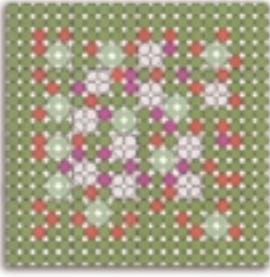


Native Exhibit

For millenia plants have grown naturally across our landscape without irrigation systems or garden hoses. Our indigenous flora is specifically suited to our environment, soils and rainfall. Too often the benefits of using native plants are ignored in favour of a water-demanding planting scheme.

Indigenous plants not only attract native birds and provide habitat for animals, but they also create a strong sense of place, providing unity in suburbs where built form and roads often create division.

Most importantly, the use of indigenous plants minimises the need for irrigation water. Check the Web or Yellow Pages for details of your nearest indigenous plant nursery.



Rainstorm

The large spots of rain that signal the start of a heavy storm are represented in this floral display. Often heavy storms erode soil and flood towns and cities. Much of the water flows away down drains to rivers and bays.

By contrast the slow melting of snow can gently fill reservoirs and creeks yielding a beneficial water harvest from our inland mountain regions.

The bonds between our urban environment and our rural hinterland should never be forgotten, nor the benefits gained from those gathering storm clouds.



The Sydney Spring 2004 flower displays represent water in its many moods.

The Sydney Living Colour displays have brightened Sydney streets each season since 1999. The Spring 2004 display brings the bright and vibrant colours of pansies, violas and lavender to signal the end of winter. The *Going Slow with H₂O* theme also highlights the importance of water conservation through better gardening and irrigation practices. The City of Sydney invites you to visit the Living Colour displays of Spring 2004 and hopes you will enjoy them all!

Displays are located throughout the city in Alfred Street, Martin Place and Castlereagh Street, Woolloomooloo, Cathedral Square, Queens Square, Sydney Square and QVB - Town Hall Precinct, Glebe Point Road, Taylor Square, and Union Square.

The maps on the back of this brochure give directions to all the displays. Showing September 19 to October 30.

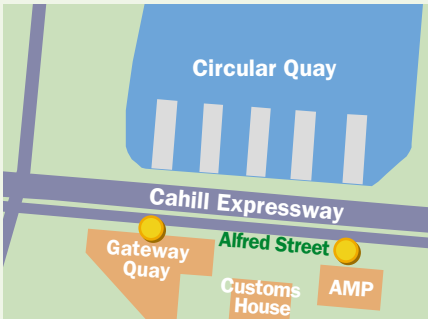
*Random though the world may be
the viscosity of water's right.*

*If more, it would strain
molasses-thick, glacier-slow.*

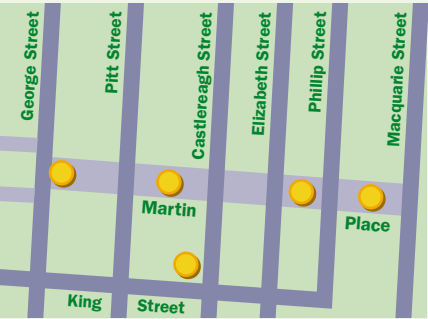
*If less, it would skip like a squirrel,
Streams flee their beds in a heartbeat ...*

From 'The Viscosity of Water' in The Forever Lands, text by Mark O'Connor. www.australianpoet.com

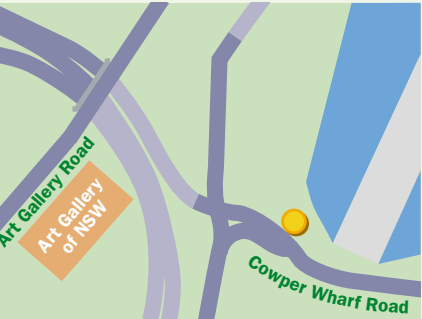
Sydney Living Colour Flower Display Sites



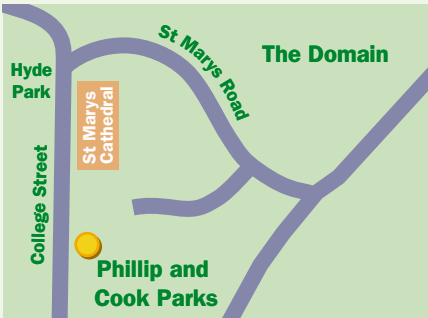
Alfred Street



Martin Place and Castlereagh Street



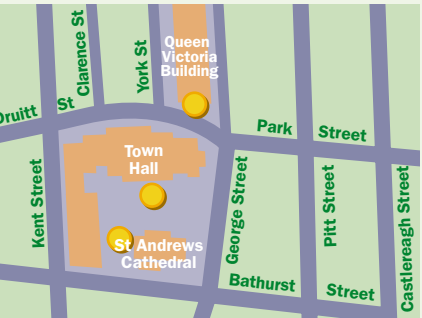
Woolloomooloo



Cathedral Square



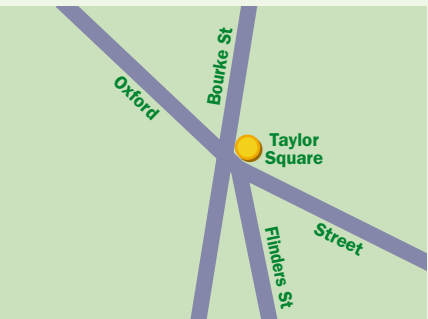
Queens Square



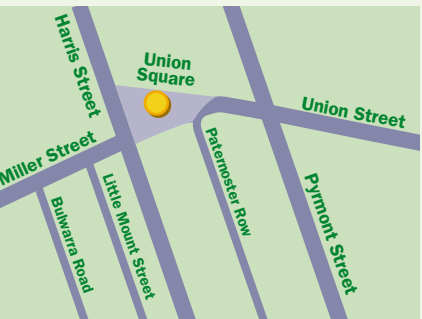
Sydney Square and QVB-Town Hall



Glebe Point Road



Taylor Square



Union Square

The City of Sydney uses ground water on its parks and open spaces.

www.cityofsydney.nsw.gov.au City of Sydney, Town Hall House, 456 Kent Street, Sydney NSW 2000



Going Slow with H₂O

SYDNEY LIVING COLOUR

The Sydney Spring 2004 flower displays represent water in its many moods.



Saving Water in Your Garden

SYDNEY LIVING COLOUR

Water

Water is essential to all life on earth. It is also essential to our lifestyle, to our industries and to the well-being of our communities. Population growth has led to the consumption of greater amounts of water — and the *per capita* consumption has also been increasing at an average rate of 3% per annum for the last 100 years. Recently, due to greater public awareness, the consumption *per capita* in Sydney is now slowly decreasing. Yet water is a finite resource and while we have built reservoirs to capture it for future use this has come at great environmental cost; not only in the valleys flooded to accommodate the reservoirs, but also in the changed conditions of the down-river habitats where irreversible change has occurred.

It has been estimated that close to 23% of domestic water consumption occurs in the garden. Much of this is applied to lawns. More than half of the water we use on gardens could be saved by applying it more efficiently, without noticeable change in the appearance of our gardens. Further savings could be made by the use of grey water appropriately recycled from our home, and by the use of water tanks to collect rain-water. Seven key principles should be implemented in order to achieve water efficiency in gardens.

The Seven Key Principles used to save garden water are :

- **Planning and designing gardens for local conditions and micro-climates**
- **Careful analysis and improvement of soils**
- **Reducing lawn areas**
- **Designing and implementing efficient watering systems**
- **Mulching**
- **Choosing appropriate plants**
- **Appropriate maintenance**



Planning and Designing your Garden for Local Conditions

A garden should respond to its site and to your expectations. From the viewpoint of water conservation it is important to recognise both the broad climatic conditions and the micro-climates that affect your garden.

Many gardening books are written by English gardeners who are accustomed to rain and cooler temperatures. Our hotter climate and seasonal rainfall patterns demand a different response. We admire many gardens in California, Spain and the Middle East, and we should learn from them. We should especially understand the benefits that accrue from understanding and working with the similar conditions in our micro-climates. For example by reducing the exposure of our garden to strong winds we can reduce water loss, while the creation of shaded areas not only reduces water demand by plants but also makes the garden more comfortable for us.

Design your garden to be appropriate to its setting and to your use of it. In large gardens some areas may be left to dry off completely, leaving an oasis area — where you enjoy outdoor living — to be irrigated using efficient systems.



Careful Analysis and Improvement of Soils

The constitution of soil is an important factor in water conservation. Plants gain access to water through their roots and soils which do not take up water can result in inefficient water use and plant stress.

Different soils have different problems. In clay soils water may not penetrate due to slow infiltration rates. Using gypsum and incorporating organic matter will open up clay soils to encourage water penetration.

Sandy soils accept water readily but may not hold it. The addition of organic matter and the incorporation of clays can help to create soils that hold more water.

In some circumstances soils don't take up water because they are hydrophobic; that is, they repel water applied to their surface. In these circumstances use wetting agents to break down the soils' resistance to moisture and to encourage water penetration. Wetting agents absorb and retain moisture in the soil, making it available to plants, and preventing wasteful run-off. Re-apply wetting agents about every 6 months. There are a number of wetting agents on the market and these can be obtained from your local nursery or hardware store.

Wetting agents are especially useful for containers where organic potting mixes can become water resistant. Water applied to the container may pass straight through. Use of wetting agents helps to avoid this wastage.



Reduce Lawn Areas and You Can Reduce Water Usage

Lawn is the thirstiest part of the garden. There are many ways by which water consumption on lawns can be reduced. You could:

- **Do away with lawns altogether, and replace them with paving (with falls towards garden beds), gravel, or lawn alternative such as native grasses or thymes.**
- **Choose to let your lawn dry off when there is no rainfall. The great virtue of grass is that it soon greens up again following rainfall.**
- **Shape your lawn to allow it to be irrigated* efficiently by a single pop-up sprayer. A circular lawn which dishes toward the centre will capture water and allow it to soak into the ground.**
- **Remove all 'thatch' build-up — the layer of debris on the soil surface that prevents water soaking into the soil. Once the thatch is removed apply a wetting agent to improve water penetration.**
- **Use a subterranean drip irrigation* system below the turf to reduce water loss to evaporation and in wind.**

Of all these options the best alternative is to avoid using grass altogether. Always keep it away from the base of newly planted trees as it robs the tree roots of moisture and slows establishment.



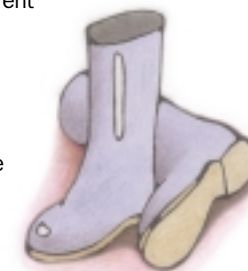
Design and Implement an Efficient Watering System

Applying supplementary water to your garden to ensure its good health and vigour is not wrong, but water should be applied efficiently and at appropriate times. Consider these pointers to efficient irrigation:

- **Divide your garden into zones, only watering those where you might try to create a comfortable oasis for family use.**
- **Apply irrigation using drip systems installed at ground-level.* This not only ensures that the water gets where it is needed but also allows it to be applied at a rate that is appropriate for soil up-take. Drip systems are also very inexpensive and do not require trenching which may damage tree roots. By using drip irrigation you get less water on plant foliage and reduce the risk of fungal diseases.**
- **Apply water at morning and evening when the sun is low* in the sky so that evaporation is reduced. Cover your irrigation pipe with mulch, again reducing evaporation.**

The efficiencies of drip irrigation can be enhanced by installing a rain water tank in your garden (large ones can be placed underground beneath paving), or by utilising greywater. Bio-filters are being increasingly used to purify domestic waste-water to enable its use for irrigation. These systems can save enormous amounts of water by re-using the bulk of your domestic water.

Remember the water requirements of different plants. Trees have extensive root systems allowing them to explore enormous soil volumes for water and if they grow little during a dry spell it doesn't matter. Vegetable seedlings and annuals only have small root systems and need to be kept watered if they are to be fully productive.



Mulching

The use of mulches is an essential step in water conservation. Mulch is a layer of material applied as a surface dressing to garden soils in order to reduce water loss through evaporation. Organic mulches are preferred since:

- **They can be incorporated into the soil to improve structure, water-holding and water absorption.**
- **They encourage micro-organisms and worm activity in the soil and thus its fertility.**
- **They can be weed-suppressing.**
- **They allow the passage of rain-water into the soil.**

Many organic mulches are available. Choose the most appropriate mulch for your garden. Home-made composts can be a cost efficient option for most households. Other mulches can be effective depending upon the design and style of your garden. Gravels allow water penetration and reduce evaporation but may reflect heat onto plants causing moisture stress. Some mulches, such as plastic sheeting, may repel water or at least inhibit penetration. Organic mulches may become hydrophobic and wetting agents may be needed to overcome this.



Choosing Appropriate Plants

There are many beautiful plants available for use in gardens. With some thought it is possible to select species that grow well in our conditions without supplementary water.

Among the plants available are those that are indigenous to our area. Australia's flora is recognised as being one of the most fascinating and beautiful in the world and many species are native to the Sydney region. Growing indigenous plants has many benefits:

- **They establish nature corridors and links through the landscape.**
- **They provide a sense of identity to regions.**
- **They support native wildlife, including our birds.**
- **They are attuned to our climate, particularly soil moisture required for growth.**

Improved drainage and the loss of topsoil have changed local conditions considerably, but the implementation of sound horticultural practices may overcome some of these losses, ensuring effective growth.

Yet even without limiting yourself to the use of native plants in your garden, there are many other plants that demand little supplementary water. After all there are other parts of the world with similar conditions to our own where water is limited. Seek advice from your local nursery and replace plants that use too much water with drought tolerant species instead. Your garden need not be any less beautiful.

Download a list of native plants from:
www.cityofsydney.nsw.gov.au/environment



Undertake Correct Maintenance

Appropriate maintenance helps to reduce water demands in your garden. The following are a few tips about how you can save water:

- **Keep your garden free of weeds. Weeds compete with plants for water.**
- **Top up mulch to ensure that water is not lost from the soil surface. Fine organic mulches may need to be topped up three times a year but coarser mulches often last longer.**
- **Don't scalp your lawn. By maintaining grass at a height above the ground you will reduce weed entry into the lawn.**
- **Ensure that blades on your equipment are sharp e.g. mower blades, secateurs etc. Clean cuts result in less water loss.**
- **Don't over-fertilise your plants, as this results in increased water demand.**

Always be sensitive to your garden and replace struggling plants with more suitable ones.

Application of these principles will make an enormous difference to water consumption in your garden without necessarily reducing its appeal, interest or charm. Water Conservation is easy to practise in the garden and benefits the whole community.



A Quick Checklist of Water Saving Ideas for the Garden

• Washing Your Car

Use a bucket. Park the car so the rinse water can run onto the lawn. That way you save water and fertilize your lawn. Car shampoos use phosphates, which can benefit grassy areas in a similar way to many fertilizers.

• Mowing Your Lawn

Avoid cutting lawns too short, and use the clippings as mulch to keep moisture in the ground.

• Watering Your Garden

By watering in the early morning or late afternoon you can reduce the amount of water wasted through evaporation. Rainwater tanks can provide water for your garden on very hot days.

• Watering Efficiently

Use watering cans and trigger sprays on hoses so you water only those areas that need it.

• Cleaning Up

Use a broom instead of a hose to clean paths, driveways and paved areas.

• Planting a Garden

Select local natives and other waterwise plants and lawns that use less water, require less maintenance and attract native wildlife. Some buffalo lawns have deep roots that make them more drought tolerant, they also don't need watering as often as other lawn types.

• Drip Irrigation Systems*

Drip irrigation is the most efficient water method as hardly any water is wasted through wind, evaporation, run-off or overspray. By slowly dripping water into the soil at the base of the plants, water is released at a rate that's easy to absorb, and only where it is needed.

• Watering Plants

Water the base of plants, not the leaves. Consider how quickly the soil absorbs the water.

• Planting New Garden Beds

Group plants with similar watering needs together as this helps ensure they all receive the correct amount of water.

• Mulching

Use mulch and add organic material such as compost to the soil. They will help the soil retain moisture and reduce evaporation by up to 70%.

Check out the Sydney Water website for other great water saving ideas! **www.sydneywater.com.au**

*Note: current water restrictions prevent use of some irrigation systems unless they use recycled water content. Drip irrigation and hosing lawns and gardens using hand held methods before 10am and after 4pm Wed, Fri, Sun are currently allowed.

For further information go to:
www.sydneywater.com.au/SavingWater/WaterRestrictions

**Current estimated figure according to Sydney Water research.

‘23% of domestic water consumption...occurs in the garden.’