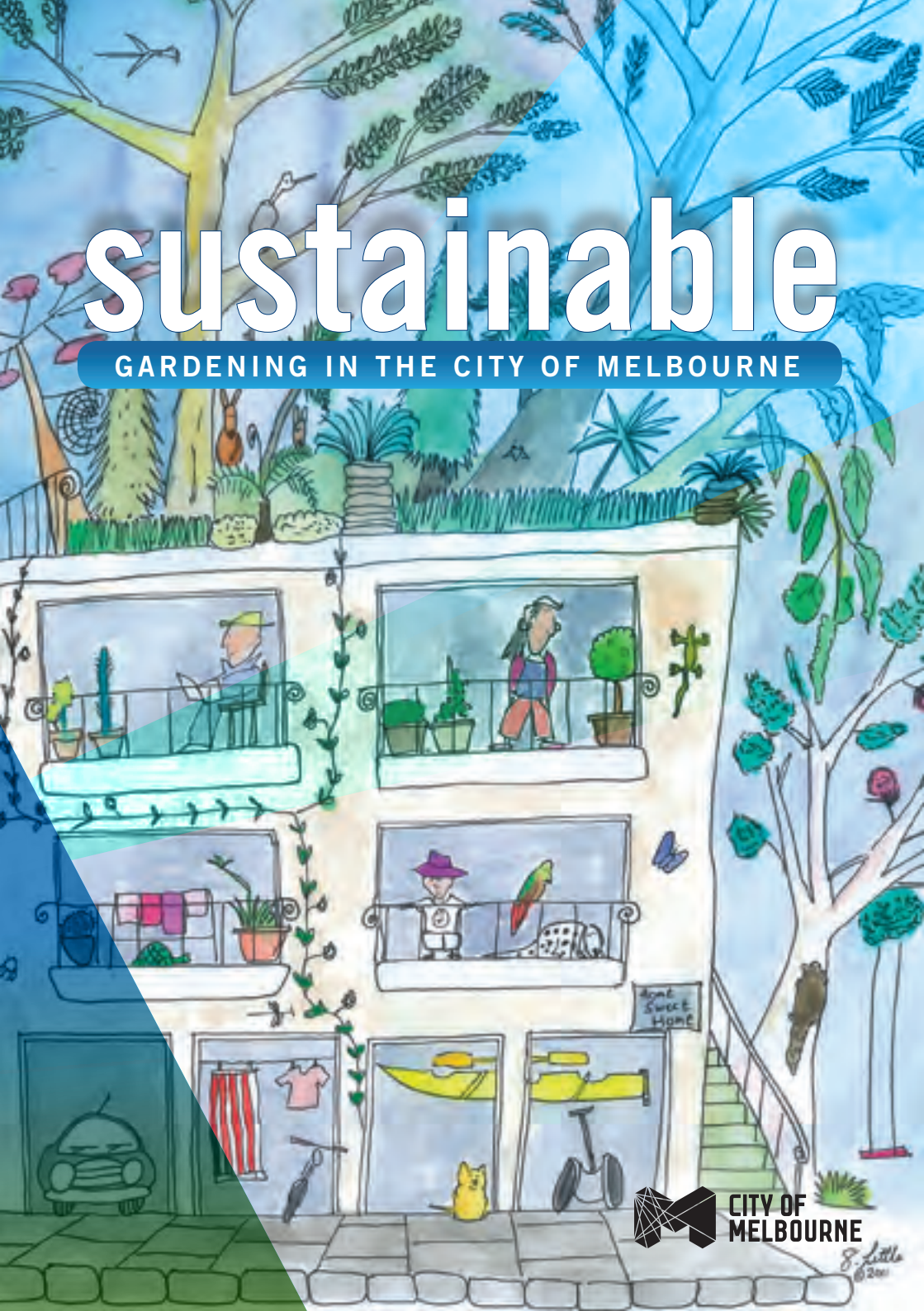


# sustainable

GARDENING IN THE CITY OF MELBOURNE



CITY OF  
MELBOURNE

*J. Little  
© 2011*

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## Introduction

The City of Melbourne's draft Urban Forest Strategy sets an ambitious vision for growing our future urban forest i.e. the sum of all urban vegetation in the municipality. As part of this 20 year plan, the City of Melbourne recognises the importance of private realm vegetation in helping our city face the challenges of climate change, population growth, urban heat island effects and improved human health and wellbeing.

Our current urban forest includes public street trees, grand parks such as Fitzroy and Carlton Gardens, remnant native vegetation of Royal Park, trees in backyards, small gardens on roof tops and balconies plus vegetation in laneways, roundabouts, waterways to name a few. Whilst the City of Melbourne is only a small locale, the contribution of private gardens and trees to the greater issues of biodiversity, liveability and human wellbeing is vital. Even the smallest balcony garden is a positive contribution. Gardens and green spaces provide us with many health benefits, not least the opportunity to reconnect with nature and enjoy its therapeutic qualities.



*Illustration for City of Melbourne by Michael Leunig*

The City of Melbourne has set some strategic targets to ensure a healthy resilient urban forest for the future. These include public realm canopy cover, innovative water solutions and tree species diversity.

The evolution of Melbourne's urban forest and in particular our gardens, stretches from the pre-settlement period of bush, grasslands, creeks and riverbanks into the European settlement phase of English inspired green spaces. Our gardens and tree selection today display a fusion of species from both elements of our natural landscape history. In creating the vision of what our future urban forest might look like, a mix of natives and hardy exotics together form a resilient urban landscape that is able to adapt to changing climates, rainfall and densification whilst ensuring our city remains liveable and sustainable.

This Sustainable Gardening Australia Booklet is offered to our residents and visitors as a guide for planting private green spaces. Gardening provides many pleasures to many people and this booklet explores the options for greening varied spaces such as roof tops, balconies and smaller back or front yards synonymous with being a Capital City municipality. Council recognises the importance of native vegetation for biodiversity values, of growing your own fruit and vegetables for health and wellbeing and of traditional exotic plants in enhancing Melbourne's unique character and identity. We hope this booklet will inspire you to create your own urban forest.



## What is sustainable gardening?

Sustainable gardening is all about designing and maintaining your garden in a way that maximises all the positive benefits gardening can have on the health of our planet whilst minimising the negative impacts of gardening on the environment.

It is easy to create beautiful and sustainable gardens when we:

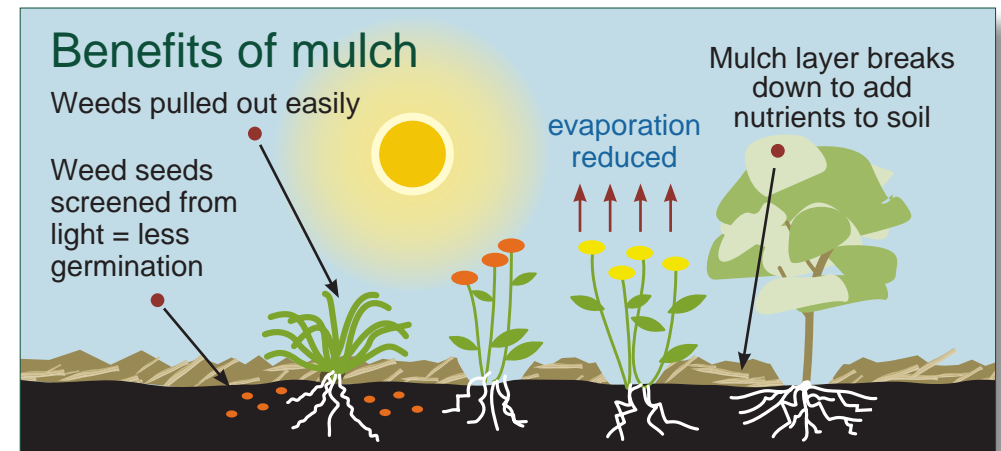
- conserve water in the garden to help maintain water levels in our catchments
- use plants to provide food and shelter for native mammals, birds and insects
- grow our own food to promote a healthy lifestyle and reduce food miles
- reduce chemical use in the garden and so reduce chemical runoff entering our waterways
- compost household and garden waste to reduce the amount of waste going to landfill which in turn helps reduce the amount of greenhouse gases produced
- create a beautiful green space for relaxation, entertainment and enjoyment. All good for the soul!



The City of Melbourne is famed for its magnificent public parks and gardens, but it also contains an amazing diversity of private spaces that can be utilised to create home gardens. The courtyard, the balcony, the rooftop, the yard, the laneway – all these unique spaces can be used to create fantastic sustainable gardens.

## Caring for your soil

**Healthy soil means healthy plants.** Soil needs organic matter such as leaf litter, compost, manure and grass clippings. Worms break down organic matter to make food for plants, and worm burrows allow air into the soil so that plant roots can breathe. Organic matter needs to be replaced as plants absorb nutrients. Compost adds nutrients to the soil, improves water holding capacity and needs to be dug in. Mulch is placed on top of the soil to reduce water evaporation and control weed growth. If organic matter is mixed with mulch the material can 'cake' up and form an impermeable barrier that rain can't get through.



### Soil improvement tips

1. Soil should be damp before you add mulch. Generally spring is the best time to apply mulch, once the winter rains have soaked in.
2. Mulches made from recycled organics are an excellent choice as they save water, are long-lasting and feed the soil when they break down.
3. Avoid small particle mulches ('fines') as they tend to clump together and repel water. Chunky mulch of varying size is ideal for the garden bed and straws that break down quickly are best for vegetable gardening.
4. Pea straw is a good option if you have not mulched the soil for a long time as it breaks down quickly, returning nutrients to the soil.



5. Soil improvement (such as pea straw on the soil surface) is generally only required for exotic plants, vegetables and fruit trees. Most local and native plants like a relatively infertile soil so they prefer a bush mulch or recycled timber mulch on its own without soil improvement.
6. When buying new soil for your garden, buy a soil that is mixed with recycled organics or compost.
7. Don't cultivate your soil unless it is very compacted after building works. Digging destroys the soil structure, which thereby destroys air holes and drainage spaces.
8. When watering use a trigger hose with a spray setting so as not to compact the soil as the water hits. The concentrated pressure of the water stream can close up valuable air spaces.

### Further information

[www.sgaonline.org.au/soil](http://www.sgaonline.org.au/soil)  
[www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au)



## Inner city garden types

There are a range of garden styles that you can adapt to whatever garden space or shape you have available. The following section looks at things you need to consider and suggests plant choices to help you create a sustainable garden whether it be a collection of pots or an expanse of backyard. So let's start in the backyard and go to the rooftops!

## Backyard gardening

To design a sustainable backyard garden you need to decide what space is available, how much time you have to tend to your garden and what type of garden you would like to create.

Do a site analysis:

- Where are your sun/shade areas in summer and winter?
- Do you have any wind tunnels?
- Do you have any significant slopes?
- Are there any drainage issues?
- Where are your water points?
- What are your access requirements?

Think carefully about what you would like to incorporate in your garden. Do you need a shed for tools, a space for a compost bin, an entertainment area, a cubby house, a clothesline, a shady space for reading, a vegie patch or a space to kick the footy with the kids?

What currently exists? Do you have straight garden beds that would be more interesting curved? Do you have a slab of concrete down the back that could be replaced with raised garden beds and granitic sand paths?



Think about the style of garden you would like to develop. Do you want a formal garden, a cottage garden, a native garden, succulent beds or an informal riot of colour and textures? Flick through garden magazines. Check out what is working in your neighbours' gardens.

Develop a scaled plan and work out what would comfortably go where. Consider locations that are practical e.g. a vegie or herb patch near the back door; compost bin down the back in full sun. Decide what needs to be done first. Remember it doesn't all have to be done immediately but rather according to a plan.



## Courtyard gardening

A courtyard garden can be a private retreat created to relax with family, entertain with friends and to garden with pleasure. Courtyard gardens are small spaces, so be careful to avoid including too many plants that can grow to create an impenetrable jungle or summertime sauna!

Courtyard garden planting will vary from garden beds, containers and raised beds (refer to the appropriate sections pp 19 – 26).

### Considerations

1. **Drainage:** poor drainage and flooding can be problems with courtyards that are predominantly hard landscaped areas. In this case alleviate the problem by using containers for plantings.
2. **Shade:** high walls and adjoining buildings can restrict the amount of sunlight reaching your courtyard. If this is an issue, select shade tolerant plants or use pots on wheels that can be moved about easily.
3. **Heat:** paved courtyards with poor ventilation may result in heat build up. Plants will help to cool the area but their water requirements will be high so install an efficient watering system.
4. **Shallow Soil:** If soil depth is less than 500mm before reaching clay, then build up garden beds to avoid plants literally drowning in the soil. Do not dig into or plant in heavy clay as your plants will not survive.
5. **Space:** limited space should not inhibit your ability to design well. Remember to use your vertical (upright) spaces as well as your horizontal spaces. You can use columnar or standard plant varieties along





paths; espaliered fruit trees on a wall; a scented creeper on a trellis; strawberries in hanging baskets; or position small potted plants on the steps of an old ladder.

6. Design: courtyards are an excellent place to experiment with design and art to create an additional outdoor room. Mirrors and plant layering can create the illusion of a larger space.



*Above: Kiwi fruit growing on pergola.*



*Left: Green wall in a courtyard.*



*Courtyard with pond.*



*Courtyard with raised bed and containers.*



## Balcony garden

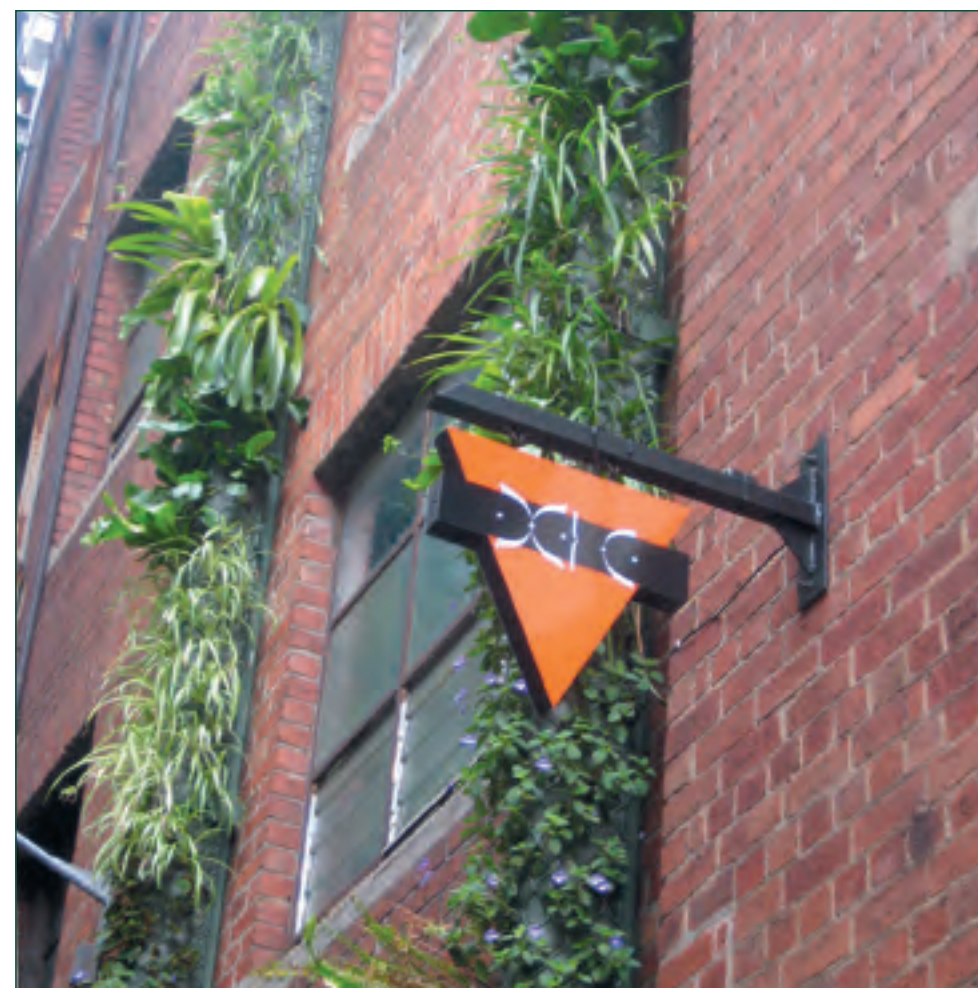
A balcony provides a wonderful opportunity to create a beautiful and productive green space. It is perfect for green thumbs with limited time to garden. Typically balcony gardens are planted out with pots and free standing raised beds (refer to pp 19 – 22 about container planting).

### Considerations

1. **Weight:** it is important to determine how much weight your balcony can hold. Remember to factor in that containers get even heavier when you water them.
2. **Space:** make the most of it but don't get so carried away with pot plants and a worm farm that you have no where to sit and enjoy them. Remember the option of going vertical: hanging baskets, planter boxes, tiered shelving and window boxes can all be utilised.
3. **Light/shade:** select plants that will grow in the conditions of your balcony. If you have a south facing balcony you will struggle to grow plants that need full sun. Better to select shade tolerant plants. Most plant labels will indicate the sun/shade preference of a plant.
4. **Wind:** balconies can be subject to strong winds that can dehydrate foliage and topple over any top-heavy pots. Select wind tolerant plants that don't grow too tall and avoid light plastic pots. Attractive screens of matting can also be attached to balcony railing to reduce wind exposure.



5. **Water:** potted plants dry out very quickly so consider self-watering pots that have their own water reservoir. This is particularly important when you intend to go away for a couple of days or in hot weather. For standard pots, make sure excess water runoff is collected in pot saucers.
6. **Neighbours:** prevent water from cascading down to your neighbours' balcony below every time you water. And make sure your pots don't become missiles by appropriately securing them to your balcony.
7. **Owners Corporations:** check to see if your Owners Corporation has any specific rules relating to what you can put on your balcony.





## Rooftop gardening

Access to an Inner Melbourne rooftop provides a great opportunity to establish a garden haven to relax, to entertain or to grow produce. Typically rooftop gardens are set up in containers and raised beds (refer to pp 19 – 22 about container planting).

### Considerations

1. **Safety:** you need to know the load bearing capacity of your roof to ensure that containers filled with soil, plants, water and mulch can be supported by your rooftop.
2. **Sun:** rooftop gardens can get very hot in the day and tend to hold onto this heat overnight. So silver-leafed, drought tolerant plants are generally recommended.
3. **Shade:** many rooftop gardens are heavily shaded by surrounding buildings so large-leafed, shade tolerant plants will perform best under these conditions.
4. **Water access:** most rooftop gardens need watering at least once a day in summer so you need to consider the practicality of hand watering or the convenience of a timed irrigation system. During periods of higher rainfall, drainage also needs to be considered.
5. **Wind:** your rooftop garden will probably be unsheltered and exposed to high winds. So use heavy pots otherwise your plants will topple over in every strong gust.
6. **Plants:** consider plants that come from open windswept areas when looking for ideas of what will grow on your area.
7. **Owners Corporation:** if applicable, check in with your Owners Corporation to make sure you are within their guidelines for establishing a rooftop garden.



### Interested in green roofs?

If the concept of a green roof as opposed to a rooftop garden is of interest, check into our Green roofs web page: [www.melbourne.vic.gov.au/Environment/WhatCouncilisDoing/Pages/GreenRoofsWallsandFacades.aspx](http://www.melbourne.vic.gov.au/Environment/WhatCouncilisDoing/Pages/GreenRoofsWallsandFacades.aspx)

## Laneway greening

For those that have limited space but access to a laneway can utilise these spaces for added greening. There are however a few important factors to consider when planting in laneways including laneway ownership and access.



### Further information

For more detailed information, go to our Greening Laneways web page: [www.melbourne.vic.gov.au/Environment/WhatCanIDo/Pages/GreeningLaneways.aspx](http://www.melbourne.vic.gov.au/Environment/WhatCanIDo/Pages/GreeningLaneways.aspx)

## Plants - indoor plants

Indoor plants not only make a space more appealing but are hugely beneficial to our health. Paint, carpet, furnishings and many indoor items give off VOCs (Volatile Organic Compounds) that can result in poor indoor air quality that affects our health. Indoor plants (or to be correct the micro-organisms in the potting mix) reduce the VOCs and improve the indoor air quality. In addition plants are responsible for removing carbon dioxide from the air, which is not only good for you but also for the planet.

Botanical name	Common name	Light	Position
<i>Dracena marginata</i>	Dracena	Low	Floor
<i>Dracaena deremensis</i>	Janet Craig	Low	Floor
<i>Dracaena fragrans</i>	Happy Plant	Low/Med	Floor
<i>Chamaedorea erumpens</i>	Bamboo Palm	Low	Floor
<i>Ficus benjamina</i>	Weeping Fig	High	Floor
<i>Howea forsteriana</i>	Kentia Palm	Medium	Floor
<i>Rhapis excelsa</i>	Rhapis Palm	Medium	Floor
<i>Ficus binnendijkii</i> syn. <i>Ficus longifolia</i>	Sabre Fig	High	Floor
<i>Ficus elastica</i>	Rubber Plant	High	Floor
<i>Yucca elephantipes</i>	Yucca	High	Floor
<i>Chrysalidocarpus lutescens</i>	Golden Cane Palm	Med/High	Floor
<i>Zamioculcas zamiifolia</i>	Zanzibar Gem	Low	Floor/Table
<i>Sansevieria trifasciata</i>	Mother in Laws Tongue	Low	Floor/Table
<i>Aspidistra elatior</i>	Cast Iron Plant	Low	Floor/Table
<i>Scindapsus aureus</i>	Devils ivy	Med/High	Floor/Table
<i>Philodendron</i> sp.	Xanadu	Medium	Floor/Table
<i>Crassula ovata</i>	Chinese Jade	Med/High	Floor/Table
<i>Spathiphyllum</i> sp.	Peace Lily	Low	Table
<i>Aglaomena</i> sp.	Silver Queen	Low	Table
<i>Anthurium scherzerianum</i>	Flamingo Flower	Medium	Table
<i>Saintpaulia</i>	African Violets	Medium	Table

## Considerations

**Water** – most indoor plants die from being over watered. To combat this you can either use a self-watering pot that regulates the uptake of water into the soil or regularly check the dampness of the soil and only water when the soil has dried out. Read the plant labels carefully and discuss the plants requirements with your local garden centre or nursery.

**Feeding** – overdoing it with the fertilizer is another reason why indoor plants die or do poorly. Indoor plants are best fed no more than twice a year.

**Dust** – periodically wiping the leaves of your indoor plants with a damp cloth helps remove dust that may clog the pores and keeps the plant foliage looking shiny and healthy.

**Rotation** – turn your pot around every now and again to keep growth even.



Mother-in-law tongue  
(*Sansevieria trifasciata*).

## NOTE

Some indoor plants can be harmful if ingested by pets. For more information visit [www.petnet.com.au](http://www.petnet.com.au)

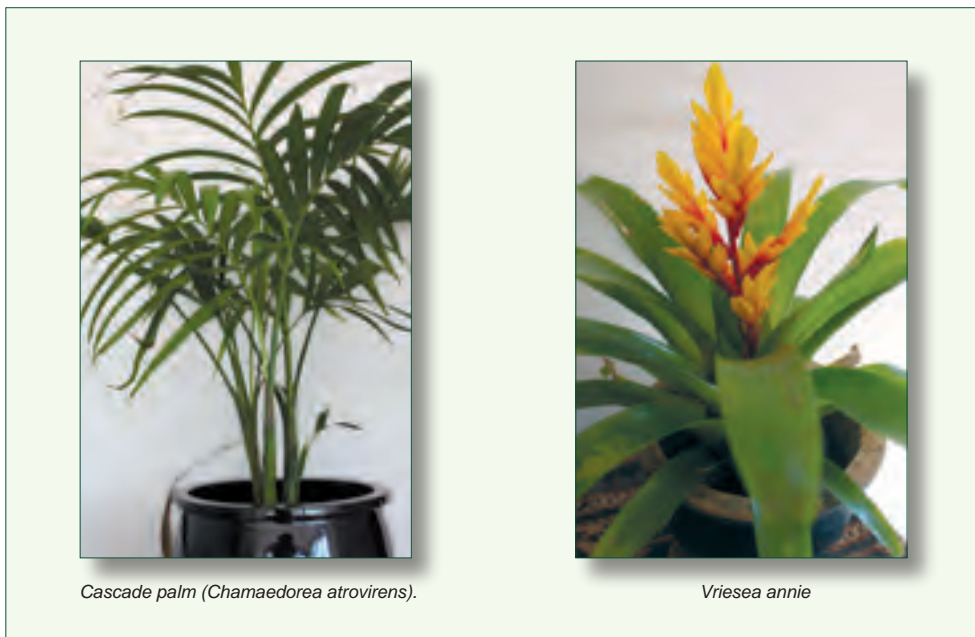




Maidenhair (*Adiantum fragrans*).

*Ficus Golden Monique*.

*Dieffenbachia* variety



Cascade palm (*Chamaedorea atrovirens*).

*Vriesea annie*

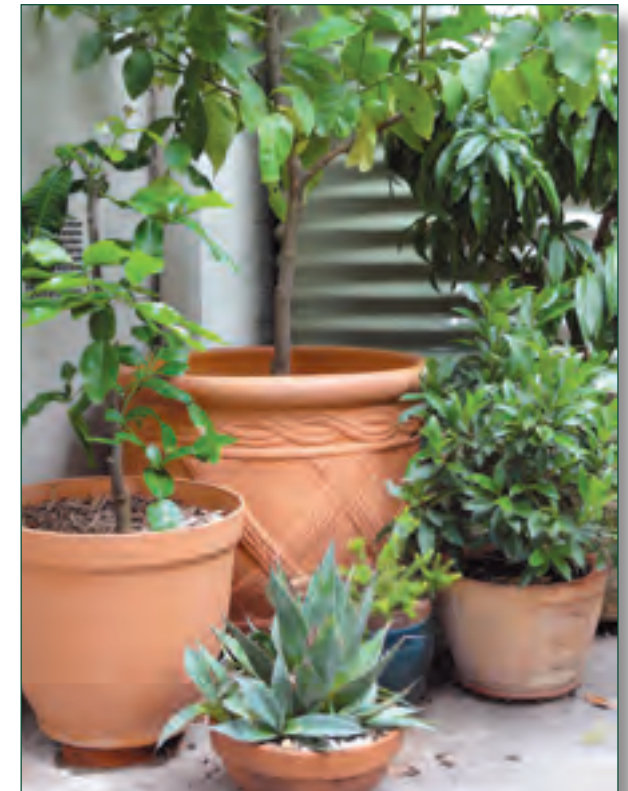
## Container planting

There are a huge variety of containers available from expensive designer pots to recycled tin cans. What you choose comes down to budget, space availability and 'the look' you want for your garden. This section includes everything from pots and raised beds to hanging baskets.

### Considerations

The Container – you need to take into account the following factors when choosing a container;

- drainage: ensure your containers have good drainage with adequate holes in the base
- size: make sure the plant roots have enough space to grow and replot into a larger pot when the roots appear to be out growing the container
- porosity: some materials e.g. terracotta will draw water from the soil so will need to be watered more frequently than a glazed pot
- weight: think about where the container is going and if it will need to be moved about ... pot + plant + soil = bad back! Wheeled pots are available to avoid too much heavy lifting.







Top: *Agave geminiflora*

Centre: Sweet basil

Bottom: Strawberry



**Potting Mix:** growing in containers and raised beds has the advantage that you get to bring in fabulous organic potting mix. Avoid garden soil as it tends to break down quickly in pots and lead to drainage problems. Potting mixes need to be topped up periodically, usually in spring. You can lift and repot or simply top dress the existing mix.

**Mulch:** on top of your containers will reduce evaporation and add nutrients to your mix. The type of mulch will vary depending on the plants e.g. a straw-based mulch for vegies, mixed sized woodchips for other plants

**Fertiliser:** container plants require regular applications

of fertiliser over time as plants constantly take up nutrients. There are many fertilisers to choose from and produce plants have different needs than flowering plants.

**Over-watering:** make sure you know the moisture requirements of your plants and follow them. Before you water check the soil moisture by putting your finger in the soil up to the second knuckle. If the soil on your fingertip feels dry, water your plant. If you do over-water the leaves may turn yellow and fall off or your plant may go limp. If your soil is too wet move the container to a sunny spot until it dries out.

**Under-watering:** in summer you may need to water your container plants every day, particularly if they are small containers or hanging baskets with less soil to hold moisture. Make sure you give your plants a good soak so that water is coming out of the bottom of your pot. If your plant does dry out they may be revived with a soak in a bucket of water.



Plants: you can plant virtually anything in a container. The important considerations are to:

- grow a plant in the right sized container for its roots and height
- ensure you have the right plant in the right place e.g. Sun loving plants in full sun areas
- check your plants regularly for pests and diseases
- group plants that require similar levels of watering together.

Planning: containers look best when they're grouped together, with pots of all different shapes and sizes closely clustered. To create a sense of space and depth select pots of different sizes and group them from smallest pot size at the front to larger pot size at the back.



## Planting garden beds

A wide variety of plants from natives, ornamentals and produce can be incorporated into your front or back yard. It is generally best to group plants according to their water and nutrient requirements.

### Natives:

- once established many indigenous (local) and native (Australian) plants can be drought tolerant and require less frequent watering compared to exotic plant species or annuals
- if sourced from arid areas they rarely require additional fertilising
- are usually happy with a mulch mix of small and large woodchips.







### Ornamentals (exotics):

- require some investigation into the size and shape of the mature plant to determine if it is appropriate for a city garden. An inappropriate planting may grow so large that it will be a problem for you or your neighbours many years down the track
- many traditional species come from cold European or Asian conditions and so require high applications of water particularly in summer. If you want to include these ornamentals in your garden focus on those species that are from Mediterranean regions
- may look sick and spindly without high applications of fertiliser for lush, healthy growth.
- are usually mulched with mixed size woodchips.

### Produce:

- perennials can be included in ornamental garden beds, but annual vegetables are usually planted in a dedicated section of your garden. Seasonal produce plants will have a fast turnover that will

result in unwanted disturbance to the soil around permanent plants when cultivating

- it will be necessary to improve the soil of your veggie patch by incorporating organic matter into the top layer at the end of every growing season. Home made compost and aged animal manures are best for this
- if your garden soil is primarily clay an application of gypsum may be helpful to break it down before adding compost
- before planting, invest in a soil pH testing kit from a garden centre or hardware store and use it to check the soil pH. Nutrients essential to healthy produce growth are all available within the 6.5-7.5 pH range. If the pH is too low (acid), it can be raised with Dolomite or Lime. If too high (alkaline), it can be lowered with sulphur but this will take time.
- rapidly growing vegetables will generally benefit from a liquid organic fertilizer applied every few weeks during the growing period
- cover the bare soil with a straw-based mulch (pea straw or lucerne) that will help keep the soil moist, reduce weed infestation and break down rapidly to provide additional nutrients to the soil. Apply thinly as required. Unfortunately mulches can shelter unwanted pests like earwigs and millipedes so don't use around young seedlings.
- rotating the position of vegetables in your garden beds each season will help prevent diseases from spreading. So if you plant





cauliflower in Bed one this year, plant it in Bed two next year. (Refer to the SGA website for the fact sheet on 'Crop Rotation' for further details)

- use natural means to control pests such as sticky traps, companion plants or botanical oil sprays. Manually inspect your plants for pests in the early morning or at dusk and keep an eye out for snails on young seedlings
- consider growing vegetables from open pollinated, non-hybrid and heritage seed stocks for more variety and interest at your kitchen table. Consider saving seed from your strongest performing vegetables from one year to the next.



### Further information

Some native, ornamental and produce plants have the potential to become invasive in our local parks and waterways. For further information visit: [www.weeds.org.au](http://www.weeds.org.au)



## Lawn alternatives

Traditional turf lawns are often high water users. If you are looking for an attractive living lawn alternative, that can withstand periods of low water supply and less ongoing maintenance, you could consider a range of native grasses or plants depending on the look you are trying to achieve.

**Native grasses** – one of the most successful native grasses for creating the look of a traditional lawn is the native Weeping Grass (*Microlaena stipoides*). It can be mown regularly and will grow well in a wide range of soils. Weeping Grass is drought, frost and shade tolerant, but does not cope with heavy traffic or dog urine. Excellent for a front lawn. Can be grown from seed or plugs.



Weeping Grass (*Microlaena stipoides*).

**Ground cover plants** - use ground cover plants that form dense mats, don't require mowing and perform well in shade. Examples include: Creeping Saltbush (*Atriplex semibaccata*), Climbing Saltbush (*Einadia nutans*), Kidney Plant (*Dichondra repens*) and Creeping Boobialla (*Myoporum parvifolium*).



Kidney Plant (*Dichondra repens*).

**Native wildflowers** – planting out a mass of native wildflowers to create a meadow look can be spectacular, particularly in spring and summer. This works very well as a front lawn alternative. Examples include: Tufted Bluebell (*Wahlenbergia communis*), Chocolate Lily (*Arthropodium strictum*), and Bulbine Lily (*Bulbine bulbosa*).



Common Everlasting (*Chrysocephalum apiculatum*) and Cut-leaf Daisy (*Bachyscome multifida*).

## Habitat gardening

Attracting native animals to your garden can add extra colour and interest. It can assist pest control by attracting insect predators and contribute to keeping native animal populations viable by providing a pathway for them to commute between bushland areas. All you have to do is supply your garden visitors with food, water and shelter.

### Birds

Birds are beautiful creatures that are a joy to watch in any garden. In addition, many birds feed on plant pests such as aphids and scale, contributing to non-chemical pest control in the garden! To attract birds to your garden consider the following points.

**Shelter:** birds need shelter from predators such as cats and predatory birds. Help protect your feathered visitors by providing prickly or dense plants at various levels in your garden.

**Water:** a reliable water source, particularly in summer will attract birds to your garden. If you install a birdbath, place it near dense or prickly plants to provide birds with protection from predators.

**Food:** small birds – Silvereyes, Supurb Fairy Wrens, Scrub Wrens, Finches, Fantails and Thornbills forage in the lower levels of the garden. They feed on insects and help to keep plant pest numbers down. Native grasses such as Tussock Grass (*Poa labillardieri*), Kangaroo Grass (*Themeda triandra*) and Wallaby Grass (*Austrodanthonia* spp.) provide an important source of food for grass seed eating birds such as Red-browed Finches and Crested Pigeons.

Honey Eating birds – Honeyeaters, Red Wattlebirds and Spinebills are



Adult male Superb Fairy-wren (*Malurus cyaneus*).



Grevillea (*Grevillea longistyla*).

specialist nectar feeders. They use their brush-like tongues to collect nectar from the flowers of Melaleucas, Correas (*Correa reflexa* or *C. glabra*), and Silver Banksias (*Banksia marginata*). They also like to eat insects as a source of protein.

Parrots – Rainbow and Musk Lorikeets feed on Eucalypt flowers and seeds, while Cockatoos and Galahs prefer the seeds of Hakeas (*Hakea nodosa*), Callistemon (*Callistemon sieberi*) and Eucalypts (*Eucalyptus radiata* or *E.ovata*). Red-rump Grass Parrots feed on grass seeds.



Red-browed Finch (*Neochmia temporalis*).

Large birds – Magpies, Kookaburras and Butcherbirds feed on larger insects, small lizards and skinks.

### Butterflies

Butterflies are a welcome addition to any garden and with a few simple design principles are easily attracted.

**Nectar traps:** colourful, massed flower beds draw butterflies in and keep them happily moving through the garden. They are attracted to a large range of coloured flowers, in particular blue, yellow and red.



Australian Painted Lady (*Vanessa kershawii*).

**Flowers:** simple, flat flowers make it easier for butterflies to extract nectar. Double flowers (multiple layers of petals) are difficult for butterflies to feed from, but simple flowers like Daisies, Pelargoniums (*Pelargonium australe*), Bluebells (*Wahlenbergia communis*), Saltbush plants (*Atriplex cinerea*), and Pea flowers (*Bossiaea prostrata*) are more suitable.

**Position:** butterflies use the early morning sun to warm themselves and retreat to cooler, shadier places during the heat of the day. Providing a sheltered position that combines warmth and protection is ideal.

Also consider adding flat rocks for butterflies to bask and to court each other. Mud puddles or a dish of damp sand can provide them with water and salts.



**Host plants:** incorporate host plants for butterflies to lay eggs. Caterpillars are generally small and shy, and won't devastate the garden. Popular indigenous plants include Bursaria (*Bursaria spinosa*) and Mat rush (*Lomandra longifolia*), and grasses such as Kangaroo Grass (*Themeda triandra*), Wallaby Grass (*Austrodanthonia* spp.) and Tussock Grass (*Poa labillardieri*).

## Bees

Bees play a critical role in the open pollination of many plants resulting in bountiful harvests of both fruit and vegetables. Having bees in your garden will ensure your vegie garden has better harvests and allows you to collect your own locally adapted seeds for re-sowing next season. To attract bees and other pollinators you need to incorporate flowering plants amongst your vegetable so that they can't resist visiting your garden.

Natives bees are attracted to flowering plants such as grevilleas, bottlebrushes and native daisies.

Honey bees collect pollen and nectar from a wide range of flowering plants and tend to prefer yellow, blue or purple flowers. Your vegie patch will be buzzing if you plant rosemary, oregano, strawberries, cucumber, capsicum and pumpkin. Nearby beds could include a mix of salvias, geraniums, sunflowers and zinnias that will attract bees.



Bee on *Allium* spp.

Bees are active from dawn to dusk particularly in the warmer months. They are highly vulnerable to garden chemicals even pyrethrum, so avoid using them if you want bees in your garden.

## Interested in keeping a small hive?

For information on keeping honey bees visit The Beekeeper Club [www.beekeepers.org.au](http://www.beekeepers.org.au)

## Frogs

What could be more interesting than watching tadpoles grow into frogs and then being serenaded by their calls at night. Frogs also help control pests in your garden as they eat flies, mosquitoes, slugs, snails and even spiders.

In order to enjoy frogs in your garden you will need to provide a pond with certain features, but you'll also need to live near a frog population to attract them from.

A frog pond can incorporate one or all of the requirements for each part of the frogs' life cycle:

- damp bog zone for adult frogs
- shallow water zone for laying eggs
- deep zone of at least 30cm for tadpoles

Your frog garden should also have:

- soft, thick vegetation that droops into the water, for shelter and protection
- been made from non-toxic materials (concrete ponds will need to be sealed and plastic ponds be made of food-grade plastic)
- food plants for tadpoles (and they will eat them, so don't put your prize waterlily in there)
- rocks, logs, bark and leaf litter
- mostly shade
- sloping sides for frogs to crawl out.

## Frog-friendly plants:

Tufting plants – Pale Rush (*Juncus pallidus*) or Black-anther Flax-lily (*Dianella revoluta*).

Bog plants – Thatch Saw-sedge (*Gahnia radula*), Knobby Club-rush (*Isolepis nodosa*), Tassel Cord Rush (*Restio tetraphyllus*).



Juvenile Growling Grass Frog (*Litoria raniformis*).



Common Nardoo (*Marsilea drummondii*).

Water plants – Common Nardoo (*Marsilea drummondii*), Tassel Sedge (*Carex fascicularis*), and Water Ribbons (*Triglochin procerum*).

Things to avoid:

- fish – most fish will eat tadpoles
- fountain pumps – tadpoles and eggs can be killed by them
- cats and dogs – protect the frog area of your garden with sharp, spiky plants
- chemicals – frogs eat insects, so you don't want to spray them. Frogs are very sensitive to chemicals which can be absorbed through their thin skin
- allowing floating plants such as Duckweed or Azolla to cover the top of the pond. This can result in reduced oxygen levels for tadpoles
- cleaning out the pond too often – tadpoles need some material to be breaking down in the pond water to provide food for them
- collecting tadpoles from the wild is illegal in most parts of Australia.



Peron's Tree Frog (*Litoria peronii*)

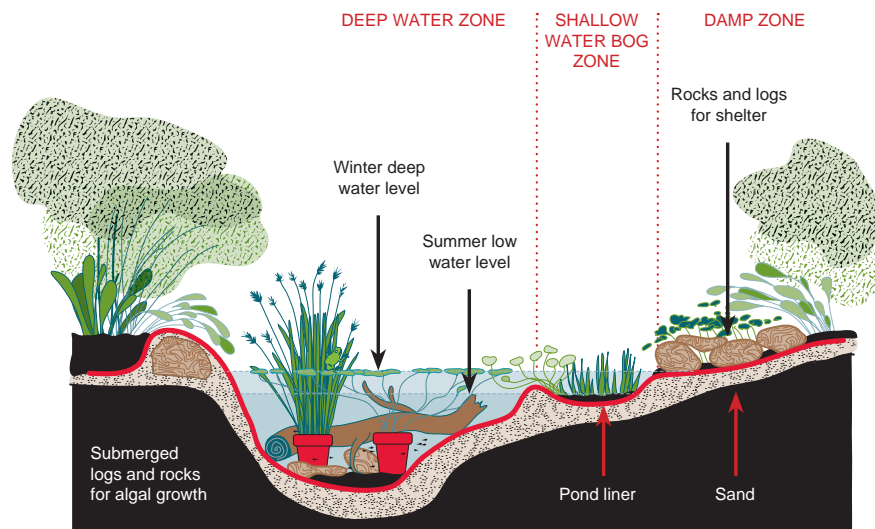


Diagram above: The elements of a frog-friendly garden pond or frog bog

## Sustainable water use - water harvesting

A rainwater tank is a good way to reduce the amount of mains (drinking) water used on your garden and as an important flood mitigation tool. Collecting rainwater from the roof will provide water for the garden that is not subject to the same restrictions as mains water.

Rainwater tanks can also be used to directly supply water to the toilet, bathroom and laundry. If mains water is connected to a rainwater tank the water must be used in compliance with current water restrictions for garden use. Victorian Government rebates are available to cover some of the costs of installing rainwater tanks. Conditions apply. Contact your local water retailer for further information or visit



[www.ourwater.vic.gov.au/ourwater/water\\_smart\\_rebates](http://www.ourwater.vic.gov.au/ourwater/water_smart_rebates)

The ideal tank size will depend on what the water will be used for, the size of your roof and local rainfall patterns. The larger the tank the more expensive it will be, and obviously the more room it needs.

A smaller tank might be enough to provide 'opportunity' water for occasional use, but is not likely to last through the summer. For greater certainty of supply, and to reduce your water use overall, a larger tank is needed. A tank holding 3000 litres or more is ideal for summer watering. Also consider whether a pump will be needed to move water around your garden, as there will be less water pressure coming from a rainwater tank.

Within the City of Melbourne a planning permit is not needed for rainwater tanks up to 4,500 litres, provided your property is not within a planning overlay.

### Further information

For further information on rainwater tanks and associated planning issues visit: [www.melbourne.vic.gov.au](http://www.melbourne.vic.gov.au)



## Raingardens

A raingarden is a shallow depression in the ground, natural or man made, that is designed to hold rain that would otherwise turn into stormwater runoff.

Raingardens are a great way to utilise stormwater, and are often planted with species that are used to extreme dry and wet periods. Raingardens look great and are fantastic for the environment, especially our waterways, as they help to clean and slow the rate of stormwater entering our local rivers and creeks. Raingardens can be built in any shape or size, have different layers of sand, and often have an inorganic mulch like small pebbles or stones (available from most gardening and DIY stores).

Raingardens should be located in a relatively flat place where it will receive runoff. You want to make sure runoff flows towards your raingarden site. However, raingardens are NOT a solution to wet areas with standing water. The garden must have good drainage so that water can soak in within 24 hours after rain. Your raingarden should be at least 30cm (300mm) away from the house, receive full or partial sunlight and not be constructed over a septic system.



### How a raingarden works

1. Rain and stormwater wash pollution into raingarden
2. Water spreads throughout raingarden where plants use up nutrients
3. Water seeps down through layers of raingarden trapping sediments and pollutants
4. Filtered stormwater is collected in pipes and flows to local waterways.



Diagram and photographs  
courtesy of Melbourne Water

### Further information

For more information on raingardens visit Melbourne Water: [raingardens.melbournewater.com.au/content/what\\_is\\_a\\_raingarden.asp](http://raingardens.melbournewater.com.au/content/what_is_a_raingarden.asp) To include your raingarden in the count visit: [raingardens.melbournewater.com.au/content/register\\_your\\_raingarden.asp](http://raingardens.melbournewater.com.au/content/register_your_raingarden.asp)

## Passive water sensitive urban design (WSUD)

Before urbanisation, rainfall would slowly percolate into the soil before seeping into our waterways through the ground water table. This process slows down the rate of flow and improves the quality of water by removing excess nutrients and pollutants. In modern times much of our urban landscape has hard surfaces and is impervious to water. Consequently when it rains a large volume of water rapidly enters our stormwater system carrying pollutants, affecting flow rates and often resulting in the erosion of river beds and banks.

With thoughtful consideration and careful planning you can direct a considerable amount of water onto your garden thereby maximising the use of this valuable resource and reducing the volume of stormwater entering our waterways whilst improving its quality.

### Porous paving

If you are putting down paving on pathways, driveways, or courtyards, consider a porous alternative. Commercial concrete grid and modular plastic blocks are available. Consider laying your pavers with spaces in between that will enable water to percolate into the soil. Granitic sand and gravel paths require more maintenance than pavers, but they look fantastic.

### Landscaping

Introducing gentle slopes across the surface of patios, driveways and paths can direct water onto your garden beds. By creating a small swale (vegetated channel) you can also direct rainwater away from paved areas and onto your garden. Consider directing runoff into a small wetland that can become a wonderful frog habitat.

### Further information

For further information on WSUD visit: [www.melbournewater.com.au/](http://www.melbournewater.com.au/) or [www.melbournewater.com.au/raingardens](http://www.melbournewater.com.au/raingardens)

## Compost

Composting or worm farming your food scraps, grass and garden clippings (organics) can provide you with an excellent source of free garden food and soil improver. In addition to creating great fertiliser, it reduces greenhouse gases, saves water and dramatically reduces the amount of waste going to landfill.

### Composting tips

1. Choose a compost bin size that suits your garden. Your compost bin or heap should be located on soil, so that it drains well and worms and bacteria can enter the bin to decompose the waste.
2. a) All compost bins or heaps need a balance of materials that:
  - are high in nitrogen, such as blood and bone, Dynamic Lifter or chicken manure. Kitchen scraps and grass clippings also contain nitrogen
  - contain carbon, such as dried leaves or shredded newspapers
  - aim for a ratio of 3 buckets low nitrogen : 1 bucket high nitrogen.
- b) In addition, the compost heap or bin needs:
  - water – enough so that the contents are moist but not wet
  - oxygen – added by regularly turning over the contents
  - warmth – locate your compost bin in a sunny place, but not with direct sunlight all day.

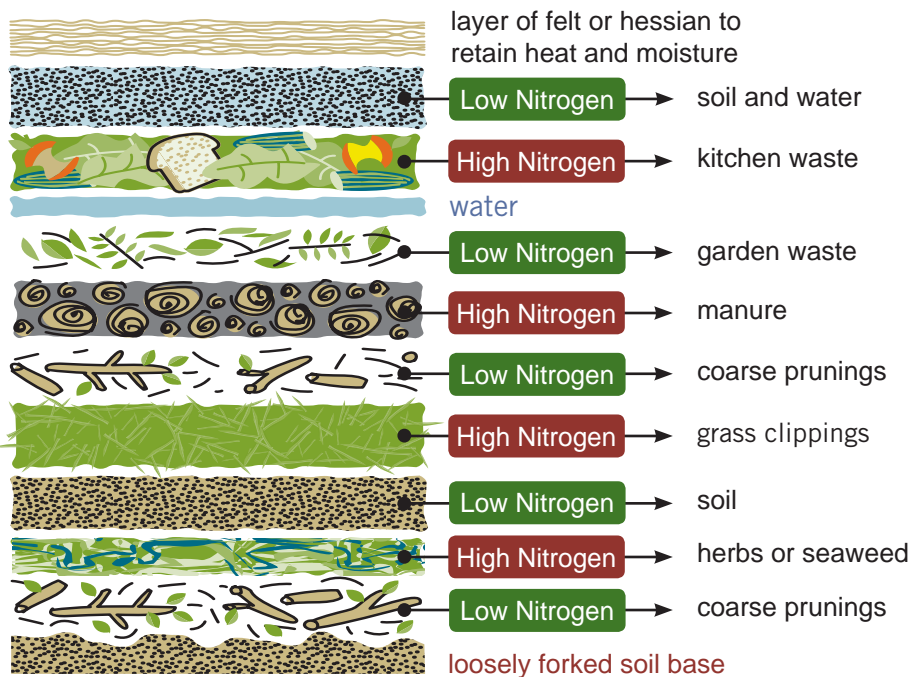




3. If you are left with half decomposed lumps in your compost add smaller pieces of food to the bin/heap to ensure it all decomposes evenly. Always crush eggshells.
4. Ants and slaters are an indication your heap is too dry. Add a sprinkling of water or less dry matter.
5. Meat scraps or fish bones can be added to compost, but only if it's working efficiently and quickly. They are best avoided so not to encourage vermin, especially over summer.
6. Visit the SGA website for information on compost trouble shooting. [www.sgaonline.org.au/info\\_science\\_of\\_composting](http://www.sgaonline.org.au/info_science_of_composting)

### Building a layered compost heap

This diagram is an example of the different layers (each 3-10 cm). Alternating kitchen and garden waste layers with an occasional layer of manure works well. Avoid thick layers of lawn clippings.



### Add to your compost ✓

- fruit and vegetable scraps
- coffee grounds and tea bags
- egg shells and animal fur
- onions and cut up citrus fruit
- pizza and egg cartons
- vacuum cleaner dust
- pure cotton articles (cut up)
- grass clippings (3-4cm layers)
- cut up prunings
- weeds without seed heads
- blood and bone
- shredded newspaper
- small amounts of wood ash.

### Keep out of your compost ✗

- fish and meat
- cat and dog droppings; consider a pet poo worm farm instead
- big woody prunings
- bulbous weeds e.g. *oxalis* spp.
- weeds with runners e.g. couch grass
- bleached or glossy office paper
- pineapple tops
- avocado seeds.



## Sustainable product selection

When buying products for the garden we often don't think about where they have come from, for example, red gum trees grow in woodlands which are part of an intricate ecosystem that supports native fauna. Red gum timber is used to produce items such as bark chips, tomato stakes and railway sleepers – harvesting this product is unsustainable. With some thought we can support more environmentally sound practices through the products we choose for our gardens and homes.

### Alternative product tips

1. Visit [www.timbershop.org](http://www.timbershop.org) to find out which timbers are sustainable. While some outdoor furniture companies claim teak is plantation-harvested in Asia, this magnificent tree is a rainforest plant that cannot be grown in plantations.
2. Grass trees, tree ferns and native orchids may have been sourced illegally from the forest. Plants should be sold with a government tag stating they have been legally collected.
3. Make sure you ask where mulch has come from as some are sourced from logging of old growth forests or contain weed seeds.
4. Ceramic pots fired using gas and produced locally have a lower environmental impact than those fired using coal or wood and transported from overseas.
5. River pebbles may have been sourced from waterways in developing countries such as China and India. This destroys the local ecosystem and causes silt to wash down stream to communities who rely on the river for drinking and washing. Use locally crushed rock and granitic gravel.

### Sustainable shopping tips

1. Ask where a product comes from and avoid buying unsustainable products.
2. Use sustainable products such as secondhand bricks, recycled timbers or recycled plastic sleepers.
3. Take your own reusable bag to carry home products.
4. Reuse your plastic plant pots or return them to a garden centre pot recycling bin.

## For Further Advice

### Useful links:

Department of Sustainability and Environment  
[www.dse.vic.gov.au](http://www.dse.vic.gov.au)

Melbourne Water  
[www.melbournewater.com.au](http://www.melbournewater.com.au)

Sustainable Gardening Australia  
[www.sgaonline.org.au](http://www.sgaonline.org.au)

Sustainability Victoria  
[www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au)

Weed Society of Victoria  
[www.wsvic.org.au](http://www.wsvic.org.au)

Wildlife Victoria  
[www.wildlifevictoria.org.au](http://www.wildlifevictoria.org.au)

**For free sustainable gardening information and advice go to:**  
[www.sgaonline.org.au](http://www.sgaonline.org.au)

### For advice on indigenous plants:

St Kilda Indigenous Nursery Co-operative (SKINC)  
525 Williamstown Road,  
Port Melbourne.  
Ph: 9645 2477

Victorian Indigenous Nursery Co-operative (VINC)  
Yarra Bend Road, Fairfield  
Ph: 9482 1710

### Further reading:

Australian Plants Society Maroondah (2001) *Flora of Melbourne*, Hyland House, Melbourne, Victoria.

Blood, K. (2001) *Environmental Weeds: a Field Guide for SE Australia*, CH Jerram and Associates, Melbourne, Victoria

Costermans, L.F. (1933) *Native Trees and Shrubs of South Eastern Australia*, Lansdowne Publishing Pty Ltd, Sydney, New South Wales.

Hodges, J. (1996) *The Natural Gardener*, Angus & Robertson, Melbourne, Victoria.

Jones, D.L. (1944) *A Field Guide to the Native Plants of Melbourne*, Bloomings Books, Melbourne, Victoria.

Marriot, N. and J. (1998) *Grassland Plants of South-Eastern Australia*, Bloomings Books, Melbourne, Victoria.

Roads, M.J. (1989) *The Natural Magic of Mulch*, Greenhouse Publications, Elwood, Victoria.



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