

Greening Guide for Home Owners

2nd Edition



Garden Cities NPC (RF) 2020

ABOUT THIS GUIDE

Garden Cities NPC (RF) is committed to building sustainable residential property developments. Our aim is to build safer, healthier, and greener communities. This guide has been produced especially for residents of Garden Cities developments, offering practical tips and suggestions for making you home and garden more eco-friendly.

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Garden Cities NPC (RF) and Environmental Sustainability

At Garden Cities NPC (RF) we believe that our planet's natural resources and ecosystems should be protected and maintained for all people of today and the future. Throughout our business we are committed to maintaining the integrity of the Earth's natural systems through ethical, scientifically sound and economically viable decision-making.



GREEN BUILDING

In the design and construction of Garden Cities NPC (RF) homes and whole developments we apply the latest green building technologies and best practices, including:

- SANS Energy efficiency & insulation standards
- Water conservation and sustainable drainage systems
- Waste minimisation and pollution control
- Sustainable building materials and products
- Health, safety and occupant comfort

At Garden Cities NPC (RF) Environmental Sustainability means

- The Earth should be viewed as a system where all elements are interconnected and inter-dependent;
- Respectful care of the environment and its conservation for future generations is everyone's moral obligation, personal responsibility and constitutional right;
- The true value of natural resources, biodiversity and ecosystem services should be accounted for in their use, and any harm to the natural environment should be avoided or minimised; and
- Potential benefits to the environment or human health and safety should always be maximised.





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WHY GREEN YOUR HOME?

A green home uses energy and water more efficiently, produces less waste and saves money. By greening your home you can help protect our natural environment for today and tomorrow.

An average household can use 250-300 litres of fresh water per person per day.

WHAT IS A WATER FOOTPRINT?

South Africa is one of the driest countries in the world and prone to drought. It is important for all of us to be aware of our water use. The water footprint is a calculation that determines the amount of fresh water used in the production of everyday products and services. For more info visit www.waterfootprint.org

Water in your home

To help you save water every day, Garden Cities NPC (RF) has installed approved water-efficient fittings such as tap aerators, low-flow showerheads and dual-flush toilets in the bathroom and kitchen of your home.

A dripping tap can waste
80 litres
of water a day

You can also save water by monitoring your usage on a regular basis, or by installing a smart water meter. These smart water meters have additional functionality, including the ability to communicate with the municipality or user, monitor consumption patterns, dispense pre-paid water or sound a leakage alarm.

DID YOU KNOW?

Taking a bath uses	A 5-minute shower uses	Flushing the toilet uses	A load of washing uses
80-150 litres	80 litres	6-9 litres	50-100 litres

Your water footprint



Pair of leather shoes = **8,000** litres



Single cup of coffee = **140** litres



A single egg = **200** litres



One slice of bread = **40** litres



A new car = **400,000** litres



A steak dinner = **15,500** litres

WATER TANKS FOR HARVESTING YOUR RAINWATER

Garden Cities NPC (RF) promotes the use of alternative sources of water to reduce the impact on potable municipal supplies.

Rainwater tanks connected to gutters are installed in Garden Cities NPC (RF) homes to harvest rainwater from your roof for use in the garden. Capturing and using rainwater helps to recharge and maintain groundwater.

Harvesting rainwater
can save up to
40% on your
monthly water bill.



WHAT IS GREYWATER?

Greywater is untreated wastewater which comes from baths and showers (body washing) and handwash basins.

Water from handwashing or washing machines is only a safe form of greywater if eco-friendly soaps and detergents have been used.

Water from kitchen sinks and dishwashers contains grease, fats, oils, bacteria and food and also should not be used as greywater.

Toilet water contains faecal matter and germs and is known as blackwater, and should never be used as greywater.

GREYWATER IN YOUR HOME

Around 50% to 80% of water used in the home can be re-used as greywater. There are, however, some health and hygiene risks that come with using greywater. To avoid the spread of disease, different types of greywater should be used safely and effectively.

Greywater is best used for flushing toilets, and is generally not recommended for watering gardens or washing cars.

To improve the quality of greywater, it is best to use biodegradable soaps, shampoos and other detergents in your home.

For more info on the safe use of greywater, go to www.resource.capetown.gov.za

HOW TO USE GREYWATER SAFELY

- Don't store greywater for longer than 24 hours. If you do, it needs filtration and specialist treatment.
- Don't allow children and animals to come into contact with greywater.
- Greywater must not flow out of your home into stormwater drains, streams or rivers.
- Don't use greywater with a sprinkler system as spraying disperses and spreads pathogens.
- Greywater should not be used more than once.
- Always sanitise your hands after using greywater.

WATER BY-LAWS

The City of Cape Town Water By-law encourages water-saving as a way of life, regulates water use and plumbing installations, and allows for various levels of water restrictions depending on available water supply.

The following basic water by-laws apply at any given time for residents of Cape Town:

- No watering of residential gardens between 10h00-16h00.
- Backwash from a swimming pool must be piped to your sewerage system and not flow into the stormwater drain.
- Hosepipes must be fitted with automatic self-closing devices.
- Hard surfacing or paved areas should be swept with a broom, not washed down with potable water.



For more information, download the summary guide to the City of Cape Town's Water By-law [HERE](#)

YOUR TOP TIPS FOR SAVING WATER

Aim to keep your water use below 180 litres per person a day

Inspect all piping, toilets and taps for leaks

Turn off the water when soaping your body and when brushing your teeth or shaving

Set your dishwasher and washing machine to the economy cycle to save water as well as energy

Avoid running your washing machine with small loads.

Use a bowl of water to peel and clean vegetables and fruits instead of rinsing under running water

Use rainwater for non-potable uses (e.g. washing the car and dog, watering your plants, washing down outdoor surfaces and garden furniture)

Check your municipal bill and monitor your water usage

Energy in your home

When choosing new or used household electrical appliances like cookers, fridges, tumble driers, laundry machines, dishwashers, irons and heaters, select those with an approved energy rating.

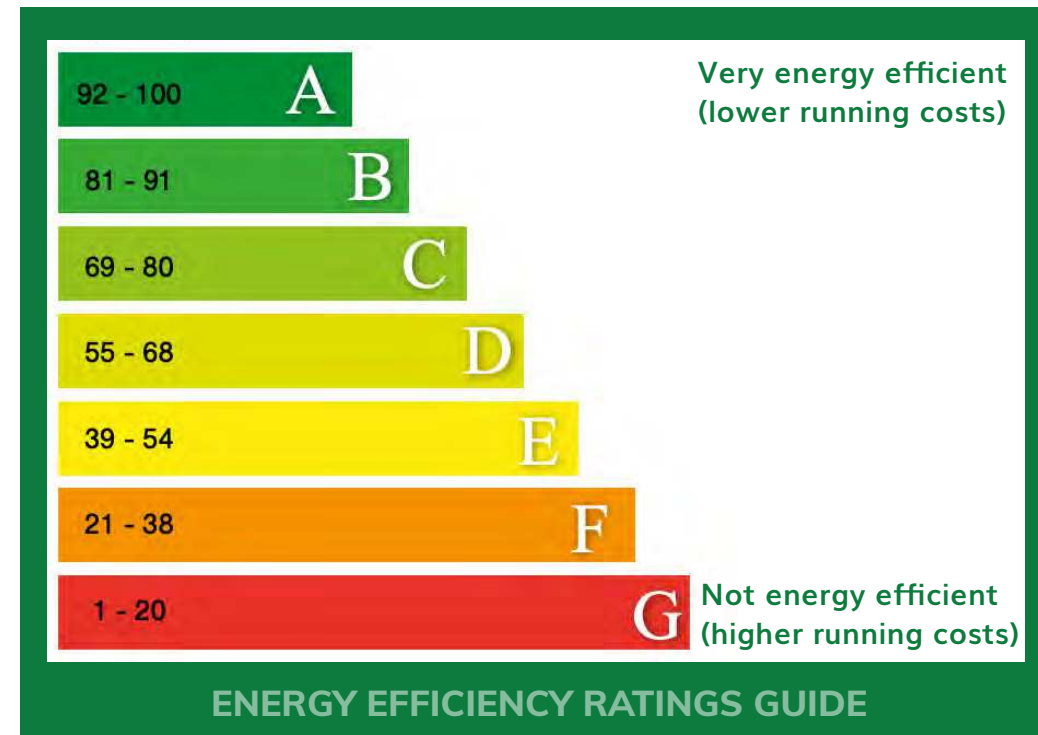
**Energy efficient appliances
use 20-30% less energy.**

Keep appliances in good-working order, checking particularly that thermostats, sensors and door seals are effective. Check for signs of wear and tear on your appliances as this can affect their energy efficiency.

WHAT IS A CARBON FOOTPRINT

A carbon footprint is a measure of the amount of greenhouse gases (mainly carbon dioxide, but also other gases such as methane and water vapour) released into the atmosphere by human activity. Increasing concentrations of greenhouse gases are linked to global warming and climate change.

Look for this energy efficiency rating label when choosing any new home appliance.



If your freezer requires manual defrosting, remember to do this regularly as the build-up of ice will make the motor work harder.

Investing in energy-efficient technology like gas cookers or induction hobs and energy-saving pots can be expensive, and sometimes small changes to the way we do things can make a big difference too.

REDUCING YOUR CARBON FOOTPRINT

To lower your energy use and help reduce your carbon footprint, Garden Cities NPC (RF) has installed the following features in your home:

- Under-roof-tile membranes
- Eco-friendly ceiling insulation
- Low emissivity window glazing

This will keep your home cool in summer and warm in winter by reducing thermal transfer through the roof and windows.

Window sizes in Garden Cities NPC (RF) homes are designed and positioned to control heat loss and gain.

WHERE DOES YOUR HOME'S HEAT GO?



For lighting a home, LEDs are currently the most energy efficient options available. LEDs use less power (watts) and generate more light.

Liquid petroleum gas (LPG) is a better alternative to using electric heaters, ovens and hobs. LPG burns cleaner with lower emissions than electricity generated from coal, and is cheaper.

It's best to make a habit of switching off lights and only using them when absolutely necessary. However, it helps to make use of timers and movement sensors in certain places of your home and for added security.

**Green homes are up to
40% more energy efficient.**

SOLAR WATER HEATER TIPS

- Regularly clean the glass panel of your solar water heater. Use a mild detergent to remove any dust that has built up.
- Every year you should also inspect all seals, flashing, pipes, fittings, vacuum breakers and valves, especially the tempering valve (TP).
- During periods of high solar radiation there will be a high frequency of TP valve opening and discharging hot water.
- The TP valves should be checked for any malfunction due to dirt and deposits of calcium or magnesium.

HEATING THE WATER IN YOUR HOME

Garden Cities NPC (RF) homes are equipped with flat plate solar water heaters to reduce both your electricity bill and your carbon footprint.

Solar water heaters absorb energy from the sun and heat your water through thermal transfer. This occurs through passive heat exchange based on natural convection, which circulates the water with or without the need for a mechanical pump.



**Water heated by a solar water heater (SWH)
can save up to 50% of your home energy costs**



Solar
water heaters
save South Africa's
national grid close
to 7 GWh per year

COOKING WITH A WONDERBAG

The Wonderbag is a simple non-electric slow cooker. After bringing a pot of food to the boil and placing it in a foam-insulated Wonderbag, your food will continue cooking for up to 12 hours without additional heat. Because the pot spends a fraction of time on the stove, Wonderbag cooking reduces by 70% the amount of dirty-burning fossil fuels used for producing electricity in our homes. For more information on the Wonderbag, visit www.wonderbagworld.com



ENERGY AUDITS

An energy "audit" is an important way to monitor the energy efficiency and safety of your home. An audit is when you check for any energy related wear and tear, such as cracks and gaps in windows, doors and walls. These can hamper the effectiveness of your home's heating and cooling systems. Don't forget to check the seals in your oven and fridge, as well as gas pipes and connections.

YOUR TOP TIPS FOR ENERGY EFFICIENCY

Set your geyser to 60°C and use a geyser blanket.

Washing machines use a lot less energy when you use the economy cycle (30°C).

Where possible, allow your washing to dry naturally rather than using a tumble dryer.

Buy local products rather than imported products that have been transported long distances and with a high carbon footprint.

Use a fan instead of an air-conditioner to keep cool in summer. If you use an air-con, keep the temperature set between 22°C and 24°C for best energy efficiency.

Keeping a fridge well stocked and organised helps to prevent cold air from escaping easily and keeps your fridge working efficiently.

Zero waste-to-landfill is a goal that drives Garden Cities NPC (RF). Our kitchens are designed with built-in recycling bins for your convenience.

eWaste is extremely hazardous to our natural environment. The only effective way to dispose of all your batteries and any electronic equipment is at a recognised eWaste recycling depot.

Managing your waste

In Cape Town around 70% of solid waste still ends up in landfill sites, most of which are full to capacity. While recycling waste definitely helps it will never solve the problem of waste.

Most products are "designed for the dump", which means they are mostly designed with single use in mind, and are not intended for reuse or recycling.

It is now more costly than ever to remove waste and send it to landfill. Recycling and "materials recovery" is fast becoming an

important means of saving money and resources, as well as protecting our natural environment.



Your Garden Cities NPC (RF) kitchen comes fitted with a twin-bin recycling system.

YOU CAN RECYCLE...

PAPER: paper, flattened and folded cardboard, newspapers & magazines.

GLASS: rinsed bottles & jars

PLASTICS: bags, rinsed bottles and containers.

METAL: rinsed food tins & drink cans.

TETRA PACKS: foil-lined juice boxes & milk containers.

BATTERIES: only at eWaste collection points.

THESE ITEMS ARE NOT USUALLY RECYCLABLE...

- Cling wrap
- Toothpaste tubes
- Disposable nappies
- Used paint tins
- Wet, dirty or contaminated items
- Aluminum foil
- Cigarette butts
- Any form of medical waste

REDUCE, REUSE, RECYCLE

Buying products with reduced packaging made from reusable and eco-friendly materials is a first step towards waste minimisation.

Every year some 45 000 tons of plastic waste end up in the world's oceans, causing harm to marine ecosystems.

Separating items at source (i.e. in your home) and then dropping them off at a recycling depot or having it collected by a recycling service is an important step in reducing waste to landfill. It also assists with job creation.

Much of your household waste comes from daily and weekly purchases, especially groceries that are heavily packaged in plastic. Ask these questions before consider any purchase:

- Can I buy in bulk and share with friends, family and neighbours?
- Is the packaging recyclable or made from compostable material?
- Can the packaging or containers be re-used in any way?

YOUR TOP TIPS FOR GREEN LIVING

Separate your waste into recyclables, non-recyclables and organic material suitable for composting

Monitor dates of your grocery items to avoid waste

Buy products with less packaging (multipacks vs single)

Bring your own take-away containers (food & drinks)

Repurpose-old clothes & use old containers for storage

Dispose of toxic chemicals, motor oils or paints safely at a recognised recycling centre. Do not pour down any drain.

Support your local food market and small businesses – local is lekker and reduces your "food miles".

THE PLASTIC RECYCLING CODES

Plastic has become a valuable source of recycling material, yet less than 10% of plastic produced around the world is recycled. Responsible retailers insist on plastic packaging with a standard code

that indicates the type of plastic used. Use these codes to guide you when buying household products and other goods. The codes help recyclers to group similar plastics materials together for recycling.



#1: PET or PETE

Cheap, light and easy to recycle, Found in single-use cooldrink, liquid and sauce bottles. Low risk of leaching. High demand by recyclers, yet only around 20% is recycled worldwide. Empty & rinse.



#2: HDPE

A versatile plastic used for numerous product and packaging purposes. Low risk of leaching. Often recycled into thicker product plastics, but soft plastics often can't be recycled.



#3: PVC or V

A tough, hardy and cheap plastic used for piping and siding. Highly dangerous dioxins can be released in production. Low recycling levels, aside from plastic lumber makers.



#4: LDPE

A flexible plastic with numerous product uses, but not widely recycled. Messy items like toothpaste tubes can be binned, but clean plastic can be recycled into thin as well as thick plastic products.



#5: PP

Polypropylene is highly heat resistant, which is why it's used for products that hold hot food and liquids. Clean the container thoroughly to remove all food and liquid to ensure effective recycling.



#6: PS

Polystyrene carried a risk of leaching but can be turned into a range of valuable rigid or foam products. Not many recyclers have equipment for effective recycling, as it's made up of 98% air.



#7: Miscellaneous

Covers a range of plastic resins including polycarbonate and electronic casings. These are seldom recycled, aside from some plastic lumber and custom-made products. Reuse is a better option.

A photograph of a modern playground. In the foreground, there is a paved walkway made of light-colored bricks. Above the walkway is a wooden pergola structure with thick wooden beams. The pergola casts long shadows on the walkway. In the background, there is a green artificial grass area. On the grass, there is a wooden play structure with a slide and a swing set. A white fence is visible behind the grass area, and trees are in the distance under a clear blue sky.

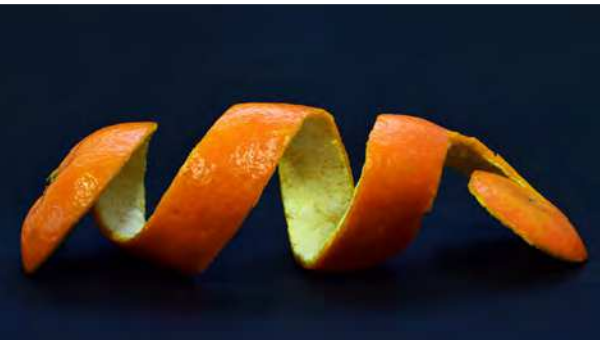
The benefits of a green lifestyle

Clean air and clean water provides a better living environment for plants, animals and people.

Nature provides us with everything we need to sustain life, so if we look after nature, nature will look after us.

Compost can be used to feed your soil and is perfect for growing your own veggies, either at home or in a community garden.

You can also set up a simple compost system at your office, place of work or a school.



Home composting

Even if you have a smaller garden or backyard, making a compost system is easy. A good compost system feeds nutrients back into soil, helping plants and food grow, especially in areas in Cape Town where the soil is not very rich.

The three most common methods of composting are to use a composting container, start a compost heap, or use a worm composter or "bin".

What to compost

As a rule, any organic matter that will rot or decay will make good compost, but each composting system is slightly different, so some research and trial and error is needed. Most nurseries stock composting containers that are perfect for any size of garden. These are easy to use and work with most raw organic

kitchen waste and soft garden waste. They also require very little effort to maintain and produce really good compost for your garden. The instructions below for starting a compost heap or system can work for a composting container as well.

Starting a compost heap or system

Getting started is easy, all you need is:

- Garden waste or acceptable organic kitchen waste.
- A secured, separate section of your garden with open soil, or a container you can place outside on the soil (ie an old tyre with a board covering the top, or even a covered box). Any container you use should not be sealed underneath, as the liquid needs to drain into the soil.
- A garden fork or stick for turning the compost in the container or heap.
- Gloves for handling food waste.

Around 50% of your household waste is food waste, which is perfect for composting.

THE BENEFITS OF COMPOSTING

Composting significantly reduces the amount of waste going to our landfill sites.

When food waste and other organic material decays in a landfill site, a toxic chemical called leachate can seep through the soil and potentially poison underground and surface water sources.

How to set up your compost system

Place your container on a patch of open soil that will receive half sun and half shade during the day. If using a designated garden area, make sure it is an open soil area and secured from dogs and other pets who may dig up the soil. Put down about 200 millimetres (20 centimetres) of mixed organic (garden and kitchen) material into your container or designated garden area. Chop up any big pieces to help speed up the composting process. To ensure your compost breaks down faster, you can add a 'starter' such as a bucketful of mature compost, animal manure, or bone meal. You can get 'starters' at nurseries and garden shops.

As you produce organic waste from your kitchen, or grass cuttings or leaves from your garden, keep on adding kitchen and/or garden waste to the system – alternatively if possible. Remember to mix up the material except for the bottom layer. Use soil, dry grass, leaves, or sawdust on top



to keep smells and flies away. Check up on your compost system after a week – it should feel hot, as the heat comes from the oxidation process and means the waste is decomposing. Every few weeks you'll need to turn or mix your compost to keep it aerated. The heat produced also kills off weed seeds and fly larvae.

Harvesting your compost

Depending on the season and what you have used, you will soon be ready to harvest your compost – the process usually takes about three months. Read our do's and don'ts below to make sure you will have a good batch of veggies or fruits.

COMPOSTABLE

- Garden waste such as grass cuttings, leaves, soil, branches and so on
- Vegetable & fruit peels
- Tea leaves and tea bags
- Coffee grounds
- Egg shells
- Paper, cardboard, sawdust and wood shavings
- Wood fire ash
- Seaweed (in moderation)
- Torn up newspaper and kitchen towels

NON-COMPOSTABLE

- Anything that doesn't rot (ie metals, glass, plastics)
- Meat & dead animals
- Garden waste sprayed with pesticides
- Toilet or septic tank sewage
- Cooked table scraps

Composting do's

- Let air circulate freely throughout the mixture.
- Make sure the compost heap is damp, but not wet. If it gets too wet, add material like sawdust, straw or manure which all absorb water well.
- Control flies by covering any new material with dry soil, sawdust, grass or leaves.
- Turn the material in the compost system regularly to speed up the breakdown process.
- Beware of large white worms which could be the larvae of fruit beetles – these can do lots of damage in your garden. Make sure you identify these worms first before removing them.

Composting don't's

- Don't add cooked food or meat scraps as they attract rodents.
- Don't add potato, lemon or orange peels – they make the soil acidic.
- Don't add weeds that have started growing.
- Don't add tomatoes.



- Don't add too many grass cuttings as they heat the compost up too much.
- Don't add tough weeds or thick branches – they don't decompose easily.

After harvesting

- Your compost will be ready in about three months. When it is dark and crumbly, then you know it is ready to start using in your home or community garden.
- A week before you harvest your compost, add some vegetable waste to bring any worms to the top of the compost system.
- Put the top layer (with the worms in it) to one side, and use the rest of the compost in your garden.
- Restart your next compost system by placing some of the old compost into your container or designated area, then adding the top layer that you put to one side.



Indigenous plants are naturally water-wise. Over many years they have adapted to local conditions.

Aliens vs indigenous

Alien and non-indigenous plants are often invasive and swamp indigenous vegetation as well as being bigger water consumers.

One of the key benefits of planting waterwise plants is that they use less water than 'imported' plants.

Waterwise gardens

Local is lekker

Indigenous plants have adapted themselves to be able to survive in local conditions, which in the Western Cape means often hot, dry and windy with occasional heavy showers.

How do plants do this? They have evolved to have reduced leaf size which offers less surface area from which water can be lost through evaporation. Lavender is a perfect example of this type of evolution.

- Some plants shed their leaves when there is a drought as this also helps to reduce moisture loss.

- Leaves that are greyish with blue/green foliage reflect the sun, helping the plant to stay cool and reducing water loss.
- The underside of the Wild Olive's leaves are lighter. The leaves turn upside down in the heat to reflect the sun's rays.



What can you do?

To optimise your water use in your garden, design your garden plantings so that your low water users are together and your heavier 'drinkers' occupy the same spaces. Not only does this make watering easier and more effective, the plants will benefit from sharing the right soil mix as their fellow plantings.

Waterwise plants

These are some of Cape Town's favourite waterwise plants

SHRUBS

Protea
Pelargonium
Strelizia

SUCCULENTS

Aloe
Vygie
Spekboom

TREES

Acacia karoo
Cape ash
Silver Tree
Wild Olive

CLIMBERS

Bougainvillea
Jasmin
Wisteria

GROUND COVER

Agapanthus
Clivia
Gazania

HERBS

Mints
(lavender, rosemary,
sage & thyme)



DID YOU KNOW?

The Spekboom (left) or Elephant's Food is a must for every home and garden. It is one of the best plants for cleaning polluted air and absorbing carbon emissions.

Don't cut it short

Whatever you do, avoid the temptation to cut your lawn too short during the peak growing periods. Look to keep your grass at around 6cm high and never cut more than the top 1/3 of the grass blade when you mow.

Not only can this damage the root structure, it also put too much stress on the grass which can compromise its long-term health... and obviously it would soak up a lot more water to grow to a decent height again.

Water by hand

Don't saturate the soil to the extent that the water sinks into the water table. You just want the grass roots to have a cool drink.

Water by hand where possible as sprinklers usually spray a lot of water onto paved areas, whereas watering by hand allows you to control the spray.

Caring for your garden

Keep your soil well mulched as this helps to trap the moisture in the soil for longer, ensuring you get the most benefit out of the water you use.

Keep mixing compost into the beds to keep the soil rich and vibrant as it helps to improve the nutrients in the soil as well as its ability to hold water, and assists in keeping clayey soil aerated.

Best grass

If you do plant lawns, fine couch grass ("kweek") or indigenous buffalo grass are recommended while thirsty kikuyu grass is best avoided.

How to create the better lawn?

An indigenous lawn cover is a low water consumer, helps to provide greenery to cool your garden space, and provides softness underfoot.

The best time to water is 6am as the combination of sunlight and moisture adds the most value to your lawn.



Did you know?

Be careful not to cut more than two-thirds of your lawn height as this can stress your grass. Stressed grass needs a lot more water to recover.

Do not water during (or soon after) it rains. Too much water results in shallow root growth and fungal attacks.

Wash your car on a grassed area

Heavy metals and chemicals which build up on your car are major sources of pollution for our local rivers, vleis and wetlands.

Wash your car on a grassy area where the vegetation and soil can filter and disperse the pollutants naturally.

CARING FOR YOUR LAWN

Add compost to improve the soil's water retention. Compost holds water in sandy soil, helps aeration and retention in clayey soil and provides valuable nutrients.

One alternative to a full lawn is laying sections of pavers (right) to form pathways. That can leave you with a strip of lawn if you really love the look and feel of lawn in your garden... or you could replace that small bit of lawn with indigenous ground cover or flower beds.



Did you know?

Sprinklers are not ideal for waterwise gardens. Rather consider drip irrigation which delivers water directly onto soil above the roots. This also prevents water loss through evaporation.

Grass cuttings are ideal mulch to be placed around certain plants as it keeps the soil moist and helps to add nitrogen to the soil. In smaller gardens composting bulkier garden waster is not practical as much of this can take between six months to two years to break down fully before it can be used as effective compost or as a fertiliser replacement.





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