

# Growing Food ...

for healthy communities

A Workbook for Aboriginal Communities



Appropriate Technology for Remote Communities

## Acknowledgements

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This booklet aims to provide practical information that may be useful to Aboriginal communities interested in growing their own fresh fruit and vegetables for better nutrition. It is presented as a workbook that has been co-produced with a video that demonstrates the techniques in this booklet. The booklet is also linked to training modules so that it can be used as part of a wider training program. A case study poster also forms part of this package. The poster documents a permaculture poultry/orchard system that was established on the Ngaanyatjarra lands.

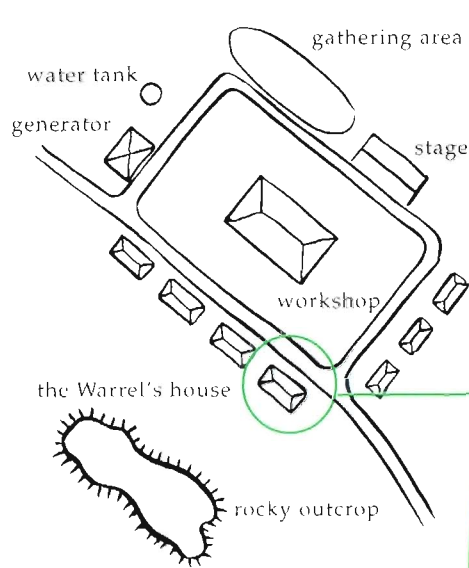
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Certificate of Horticultural Skills (Aboriginal Communities) and Certificate II Australian Land Conservation and Restoration.  
Module Title & Code; subject material corresponds with the appropriate learning outcomes.

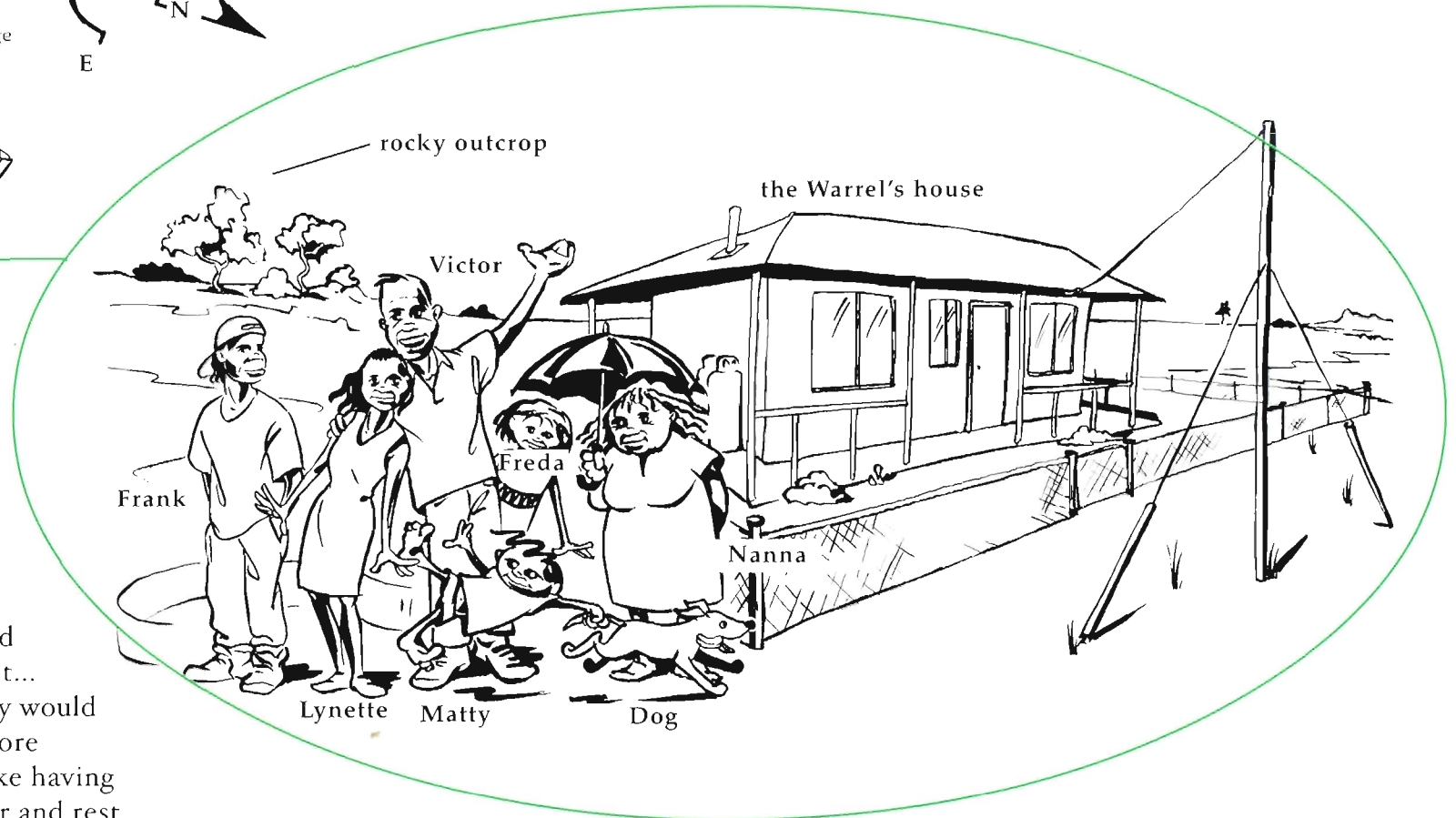
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## Plan view of the community where the **Warrel** family lives.

The Warrel family think it is great to live where they do, and they really like their house. But... there are a few things that they would like to improve to make life more comfortable for themselves, like having a good bit of shade to sit under and rest from the summer sun.



The **Warrels** made a list of the things they want to improve around their home.

1. shade from the sun
2. shelter from the wind
3. fresh vegetables and fruit
4. more firewood

**This book follows the **Warrel** families' story as they go about making their home improvements.**

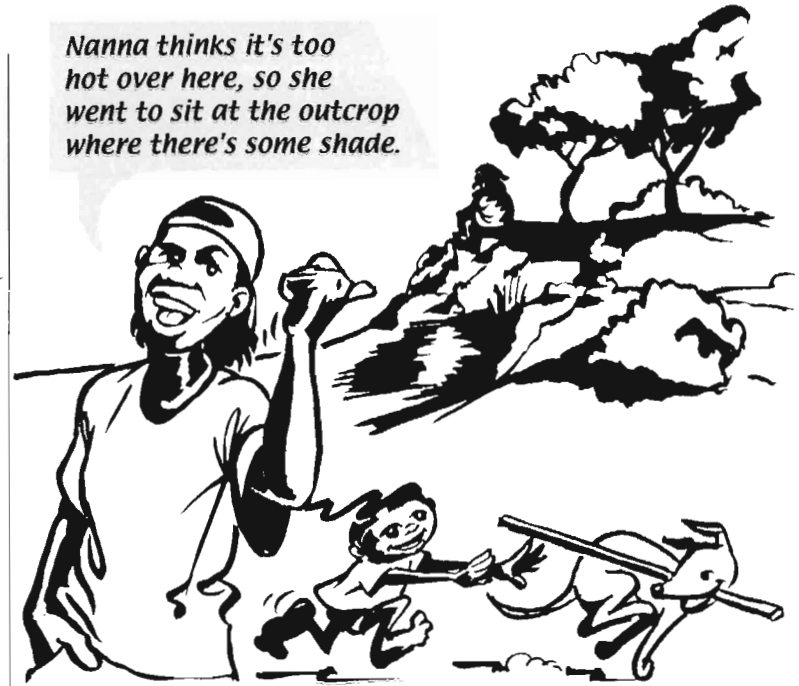
I've thought of this great way to improve our home.

What are you doing Victor? Nanna is here to visit.



I haven't seen Nanna for a while. Where is she?

Nanna thinks it's too hot over here, so she went to sit at the outcrop where there's some shade.



That's exactly why I'm building this shelter. For some shade.



Maybe we could do something about the wind too.



Some fresh vegies would be really nice as well.

# Designing By **Nature** Observation



*A good place to start is to have a look at how **nature** does things. You could most likely use the same ideas. After all, they've worked for an awful long time!*

The outcrop provides **protection** from the wind and strong sun. Water collects at the bottom of the outcrop.

Young **plants** and shrubs **grow** much better in the protection of the outcrop.



**Organic** matter, such as leaves and branches, **collects** at the bottom of the outcrop. This is called **mulch** and it improves soil quality by keeping it **cool** and **moist**. **Mulch** also builds up at the **base** of the trees and shrubs.

**Shelter** from the extreme sun and wind prevents excessive **moisture** loss and a **microclimate** results.

New **seedlings** prefer to grow where there is protection, moisture and improved soil.

**Small** trees like to grow in the **shelter** of larger ones.



*If we made our soil more like this at home, we might also get plants that **self sow**.*

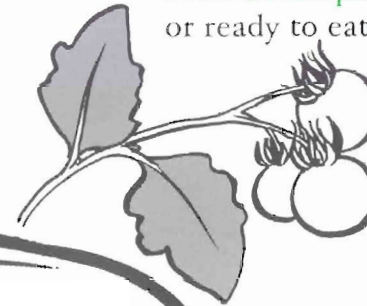
# Designing By **Nature** Observation

The plant **flowers** before the fruits grow.

The plant becomes **mature** and ready to flower.

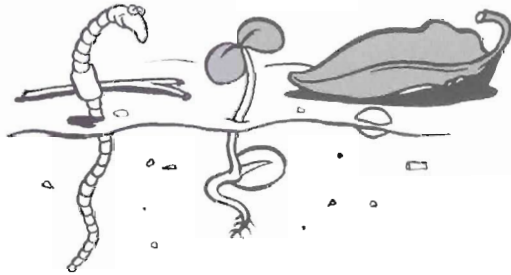


Fruit **developing** - not ripe or ready to eat yet.



*By watching plants throughout the year we can see the different stages of their life cycle. Then we'll know when the best time is to plant things, and even better, when the fruit is ready to eat. YUM!*

A **seedling** grows.



The seeds **germinate**.

**Seeds** from ripe fruit fall to the ground.

**Ripe** fruit - lovely and sweet and ready to pick.



**Your Language for:**

- seedling** \_\_\_\_\_
- flowering** \_\_\_\_\_
- fruit** \_\_\_\_\_
- unripe** \_\_\_\_\_
- ripe** \_\_\_\_\_
- seeds** \_\_\_\_\_
- germinate** \_\_\_\_\_

# Understanding Your Site

The Warrel's started by marking down all of the different elements that affected their home site.

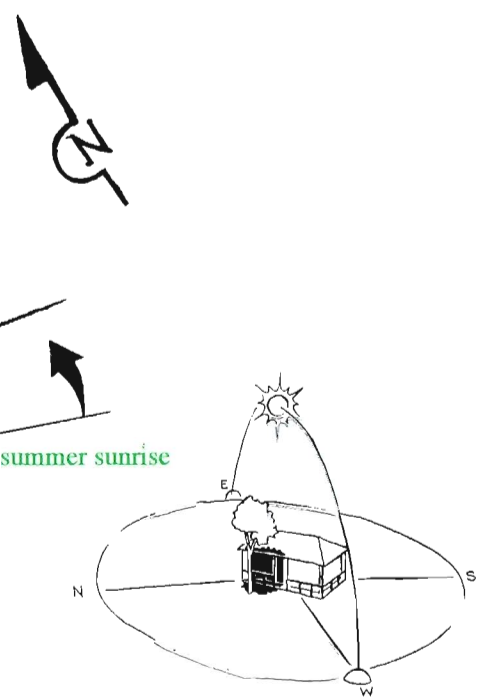
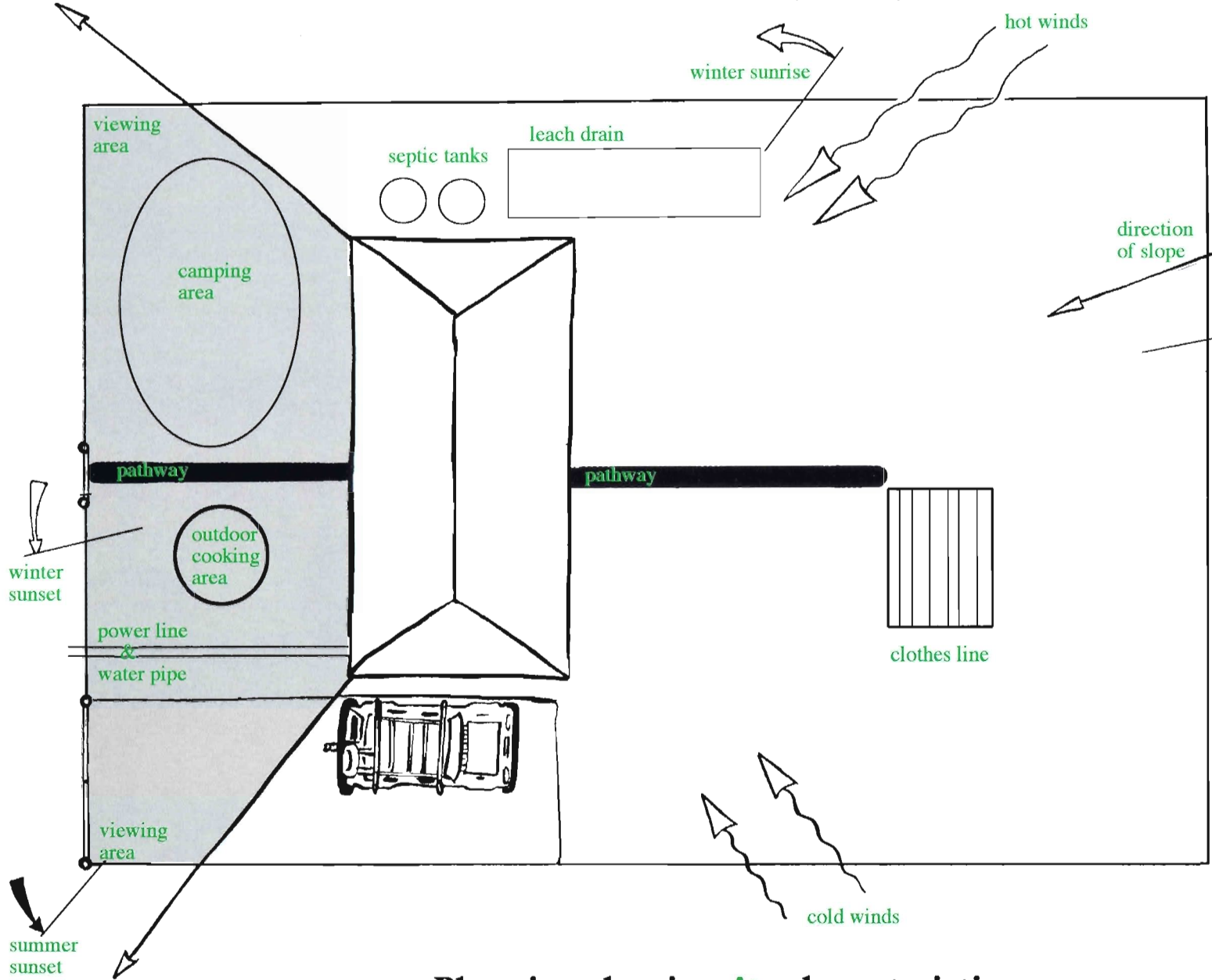


Diagram showing path of the **summer** sun.

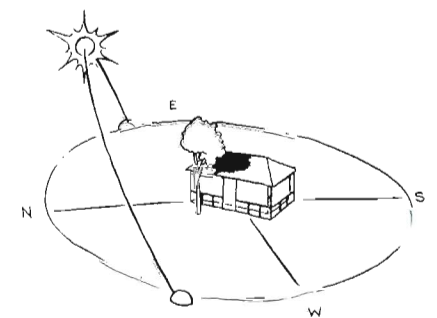


Diagram showing path of the **winter** sun.

N.B. for central and southern Australia

**Plan view showing site characteristics**

## Understanding Your Site

*Frank and Freda drew this great plan of our house and yard which shows the directions the winds and sun come from. Now we can see where some of our problems come from and how we might be able to fix them.*



When the Warrel's did their site analysis they observed:

### Sectors

- > the path of the winter and summer sun;
- > the direction of strong winds;
- > the direction of any sloping ground;
- > views they wanted to keep clear;

### Cultural/Zone Elements

- > camping & cooking areas;
- > paths and access;
- > places to sit;

### Infrastructure

- > power cables, telephone lines and water pipes;
- > septic tanks & leach drains.



During heavy rains, water would run off the roof and sloping land beside the house and collect in a pool in the front yard. Although Matty and the dog didn't mind the mud it created, it was a bit of a messy **problem**.

Victor identified an **opportunity** here to collect the water runoff and redirect it to the plants.

A **problem** that turned out to be an **opportunity** as well

## Understanding Your Site



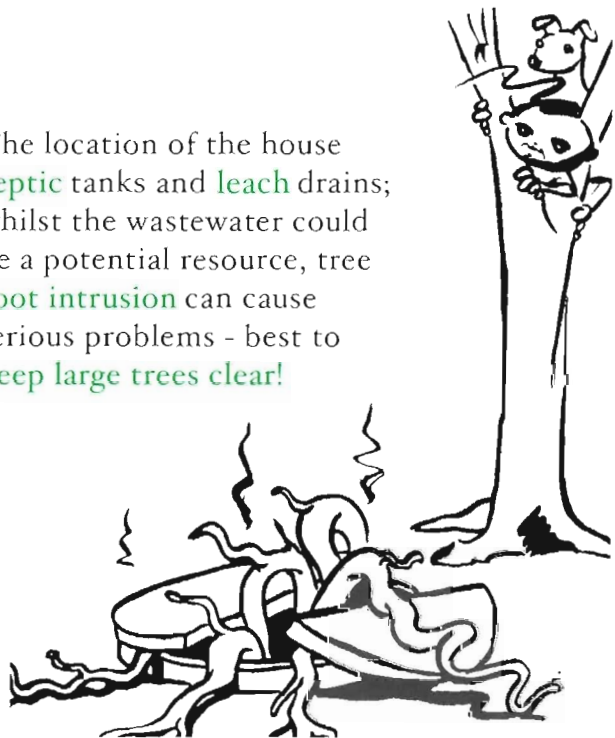
Water supply points for easy access for watering plants

The Warrel's also had to **consider** a few other things when planning their garden, such as the following.

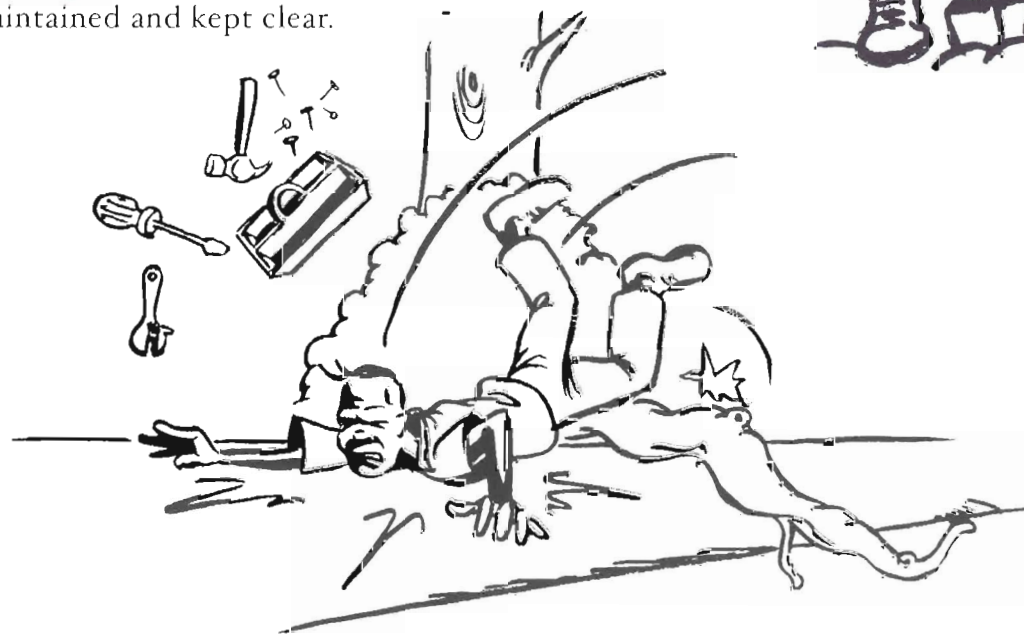
The **location** of **electricity** lines and **water** pipes to avoid them when digging!



The location of the house **septic** tanks and **leach** drains; whilst the wastewater could be a potential resource, tree **root intrusion** can cause serious problems - best to **keep large trees clear!**

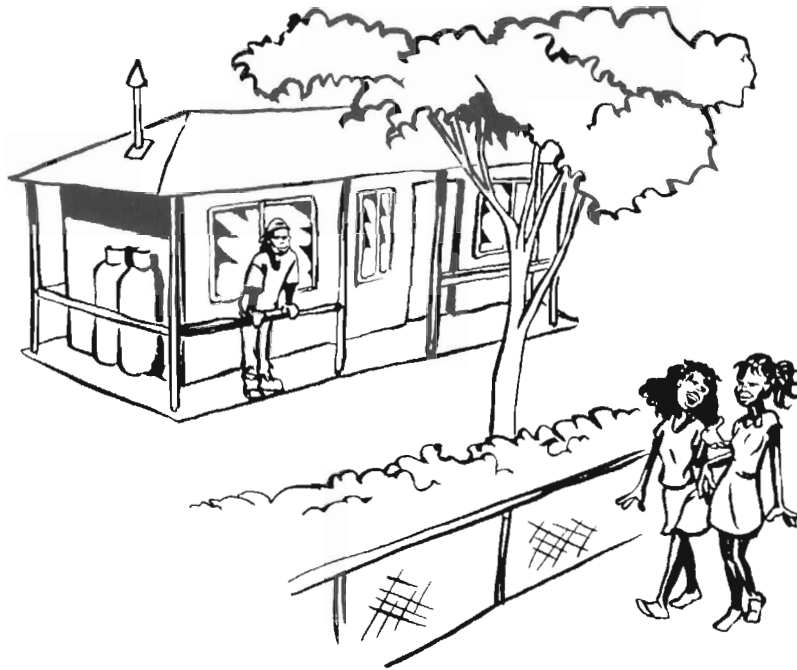


**Pathways** that need to be maintained and kept clear.



## Understanding Your Site

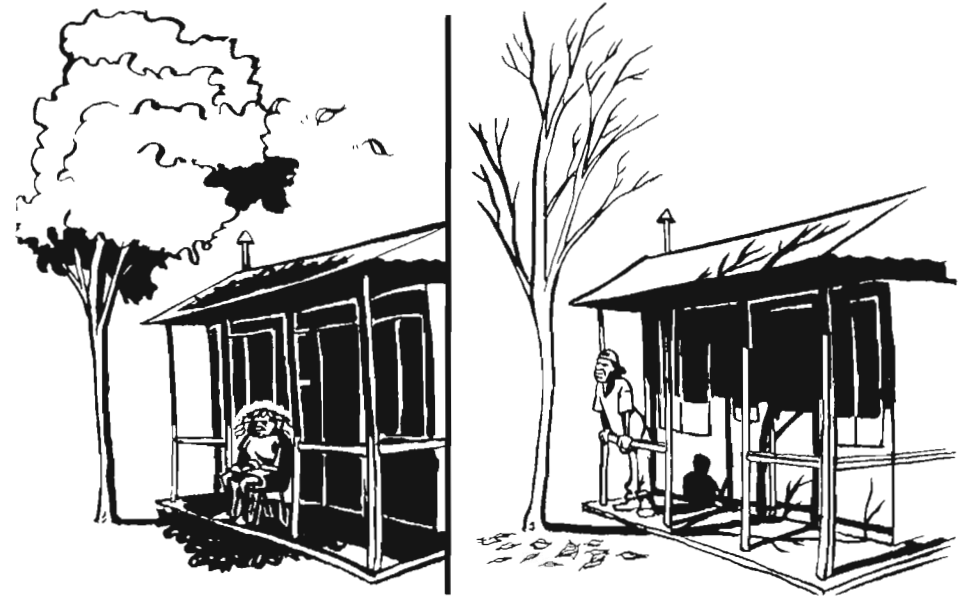
After the Warrel's had worked out the **site** characteristics of their home and community, they looked at how they used their home space. This led them to identifying important **factors** that needed to be **considered** in their plan. For example:



Frank was very keen to keep the view from their front veranda, so **low shrubs** along the fenceline were better than trees.

### Your Language for:

<b>winter sun</b> _____	<b>cold winds</b> _____
<b>summer sun</b> _____	<b>view</b> _____
<b>hot winds</b> _____	<b>deciduous tree</b> _____

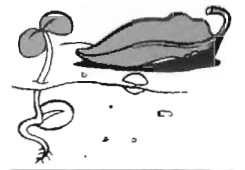


In summer it was good to have some **shade** on the north side where the family liked to sit...

...but in winter it was good to have a bit of sun to **warm** them up.

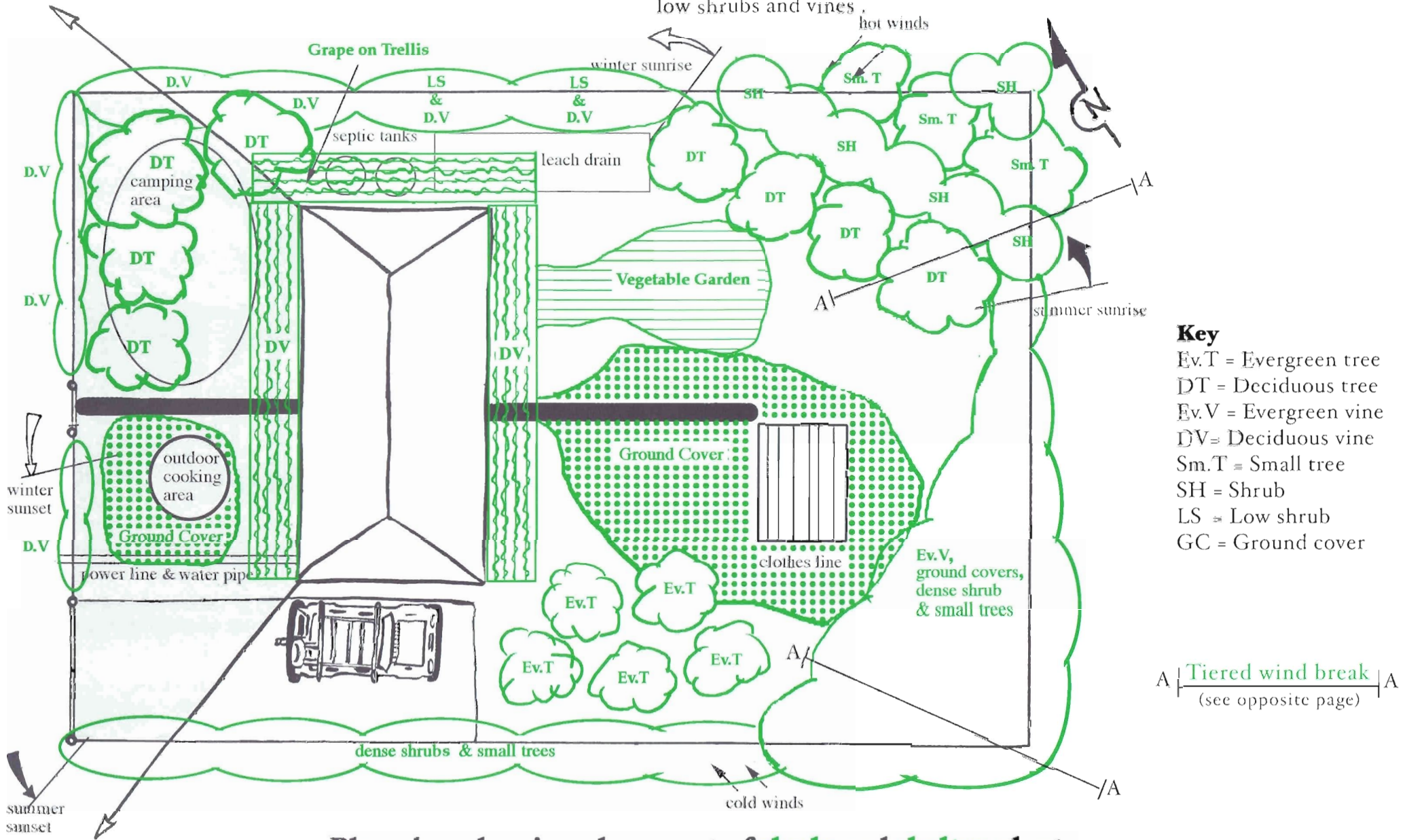
Planting **deciduous** trees, or a pergola with grape vines, were solutions to this problem.

**Deciduous** trees lose their leaves in the cold time of the year. The leaves grow back when it starts to warm up again



# Shelter From Extreme Winds and Sun

The Warrels marked out where to put plants to protect them from strong winds and hot sun. The view over the front fenceline was kept by planting low shrubs and vines.



Plan view showing placement of **shade** and **shelter** plants

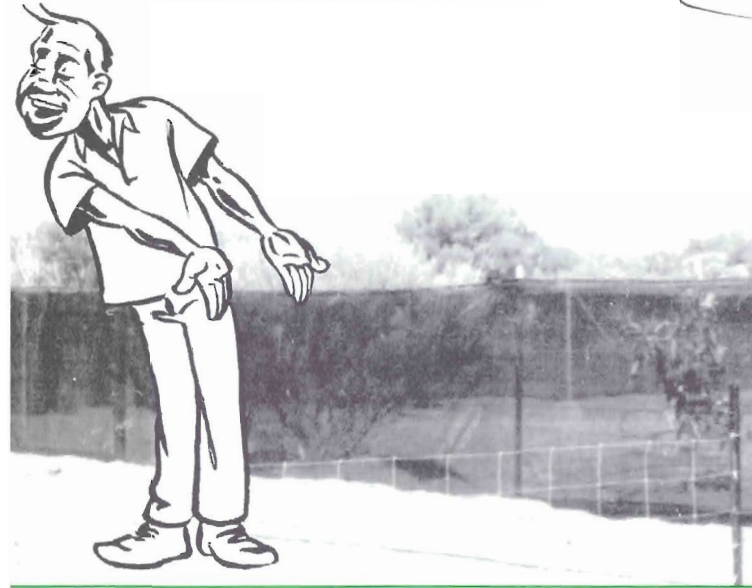
# Shelter From Extreme Winds and Sun

Victor and Lynette put up **windbreaks** to shelter the trees while they were small.

Hey Victor - I can't stand here all day protecting this little tree with my umbrella!



OK Nanna. How about I hang up some of this shade cloth along the fence instead?



A great idea.

Living windbreaks are good for a lot of things. Such as:

- shade
- shelter
- food
- some firewood
- craft wood
- mulch
- habitat for birds & insects
- source of seeds

**Your Language for:**

- shade** \_\_\_\_\_
- windbreak** \_\_\_\_\_
- shelter** \_\_\_\_\_
- evergreen tree** \_\_\_\_\_
- dense shrub** \_\_\_\_\_
- ground cover** \_\_\_\_\_

wind side

garden side

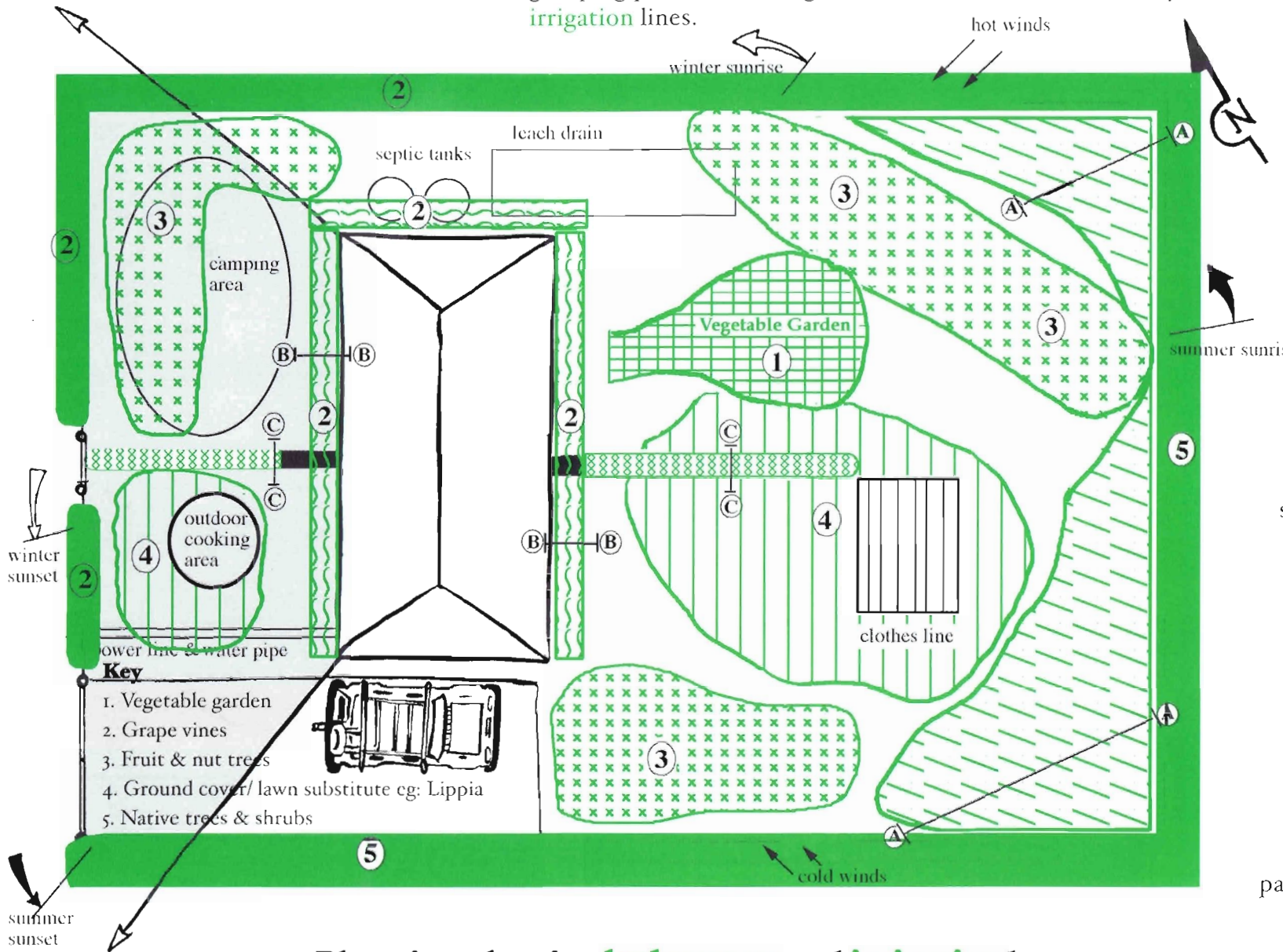


A good way to plant a windbreak is with the short plants in the front and the tall plants at the back. This is called a "tiered windbreak".

Growing plants	TAD089
Landcare	TAD093
Growing Vegetables	TAD095
Growing Fruit Trees	TAD096
Growing Flowers	TAD097
Home Garden	TAD098

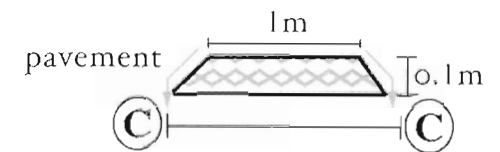
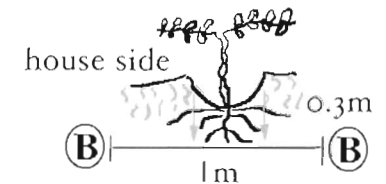
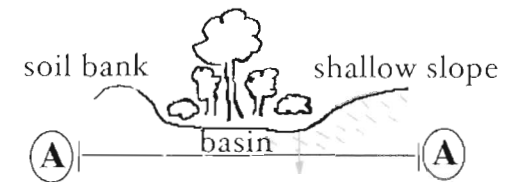
# Plant Water Needs

In order to make the best use of water, the Warrel's grouped the plants into **hydrozones** - which is grouping plants according to **similar water needs**. These hydrozones can be serviced by separate **irrigation lines**.



Each **hydrozone** was serviced by a separate **19mm irrigation sub-main** from the water supply. For **hydrozones 1 - 5** use **8mm NETAFIM Drip line tubing** running off the sub-main. See Appendix 1 - Irrigation Guide

## Cross sections showing water harvesting/flow.



**Plan view showing hydrozones and irrigation layout**

# Plant Water Needs



Nanna how are we going to water all these plants? Water's scarce enough in the community.



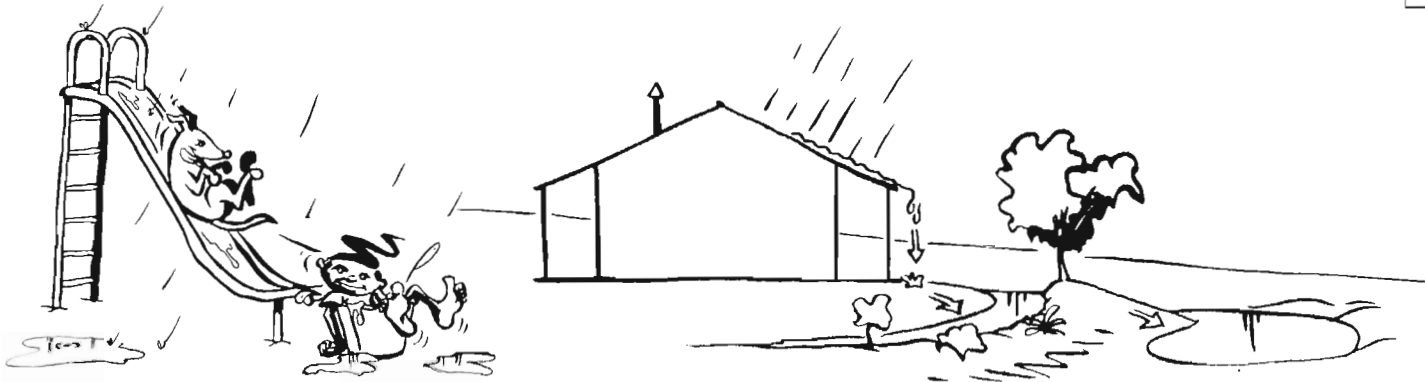
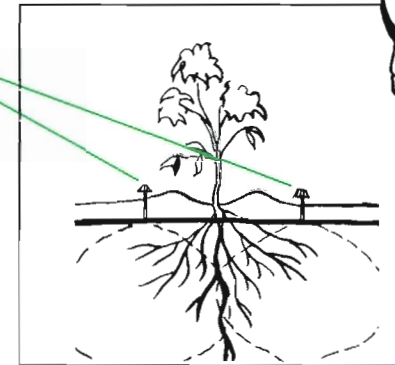
Don't worry Lynne! There's plenty of water around, we just have to catch it and be smart about how we use it.

Victor put in a **drip irrigation** system that watered the plants more **efficiently**. It also meant **no watering by hand!**

Putting plants into **hydrozones** based on similar water needs, makes good sense when putting in irrigation.

Remembering that plants out by the **rocky outcrop** grew best at the base where the **water collected**...

Placing the drippers in the right position helps keep salt away from the roots.



Your Language for:

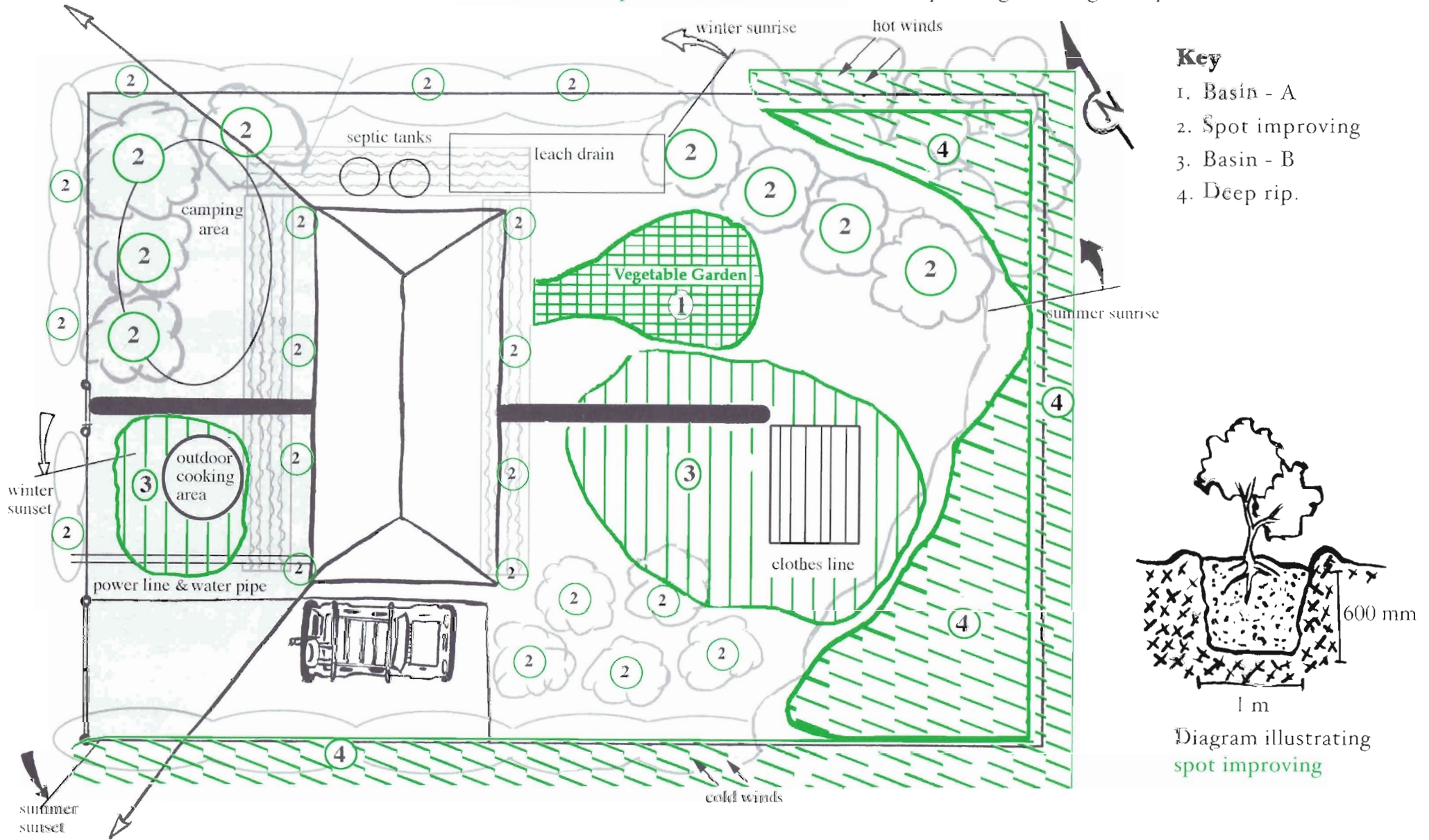
- water** \_\_\_\_\_
- water harvest** \_\_\_\_\_
- drip irrigation** \_\_\_\_\_
- water conservation** \_\_\_\_\_

... Victor and Frank set about digging **trenches** and **basins** to **collect** the **water** that ran off the hard surfaces around their house.

Watering plants TAD090

# Healthy Soil

The soil structure in the yard was observed. This allowed the Warrels to see where the soil needed improvements in relation to their planting and irrigation plans.



Plan view showing areas of soil improvement.

## Methods for Improving Soil Condition.

- (1) Basin-A - 300 mm coarse dune/river sand & top dressed with fine compost and mix in well.
- (2) Spot improving - deep hole dug to 600mm x 1m, then filled with a mix of 50% original soil + 25% coarse sand + 25% compost. Top with mulch or rock mulch
- (4) Basin-B - 200 mm of mix of 50% coarse sand + 50% original soil. Top dress with fine compost and mix in well.
- (3) Deep Rip - to a depth of 1m along planting rows with a Ditch Witch or Trench Digger if available; or loosen soil with a Jack Hammer or pick to 600 mm under each tree/shrub site. Top dress with coarse mulch.

Freda discovered a **hard** confining layer of **soil** close to the surface. This **hard barrier** could **stop** plant **roots** growing deep enough to find moisture. It needed to be **broken up** for the plants.

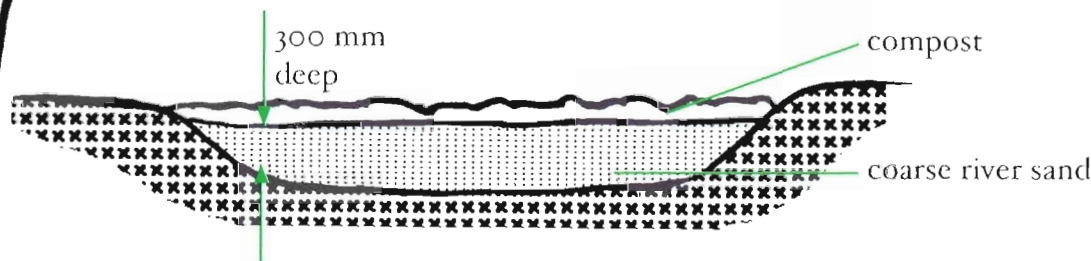
*We have to breakthrough Frank!*

*For every tree?*

*Yep!*

*Hey Dad this soil is really tough just underneath!*

*And Frank, while you're at it we need to fill this garden bed with some nice coarse sand.*



Lynne chose a **sheltered** area that was good for growing **vegetables**. It would benefit from the planned deciduous trees (it would have partial shade in summer and sun in winter). The coarse **sand** helps the water **drain** well which is good for vegetables.

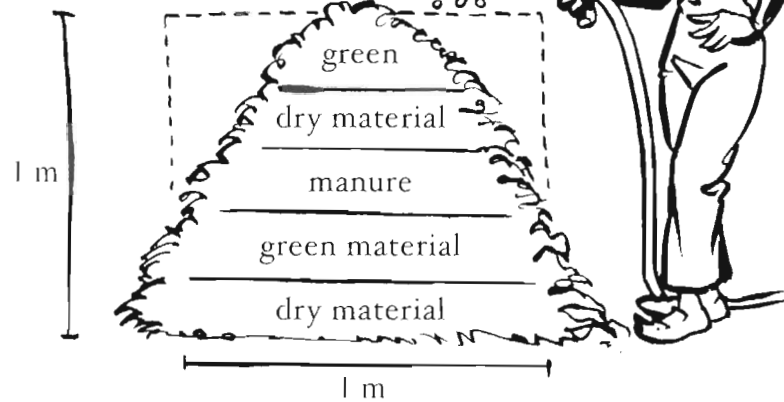
# Healthy Soil

Now, what we need to do Frank is improve the condition of our soil with compost. We just gotta make some compost first!



The Warrel's made **compost** to feed their plants.

1 Frank and Freda collected as many **leaves** and as much animal **manure** as they could find.



2 When there was a nice big pile Lynne **soaked** it well to help it rot.

3 The pile was kept **covered** to stop it drying out or **blowing** away.



5 It takes about **6 - 9 weeks** for the pile to turn into a nice fine, rich and moist **compost**.



4 Every couple of weeks, the pile had to be **turned** and **watered**.



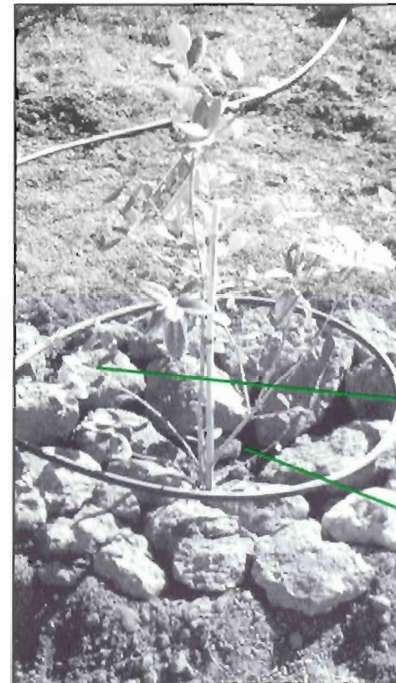
*There's enough compost here for the vegie garden and the new trees.*



## Some composting tips:

- do not use dog or human manures or meat scraps as these can attract flies, dogs and other pests which can spread disease.
- vegetable food scraps are good for the garden but need to be composted carefully (ask an Environmental Health Worker).
- try and build up your compost pile in layers - dry materials at the base, then green leaves, prunings and lawn clippings (from lawn without seed heads) and then manure or blood and bone.
- Stick your hand into the middle of the compost pile after a few days. It should be warm, which means that the materials are being composted. It will be time to turn the compost pile when the temperature is cool in the middle.

*In the bush there's often more moisture underneath rocks. So... use rocks for mulch to help hold the moisture in the soil.*



Rock mulch

Water storage basin



## Your Language for:

compost \_\_\_\_\_  
 manure \_\_\_\_\_  
 dry leaves \_\_\_\_\_  
 green leaves \_\_\_\_\_  
 mulch \_\_\_\_\_

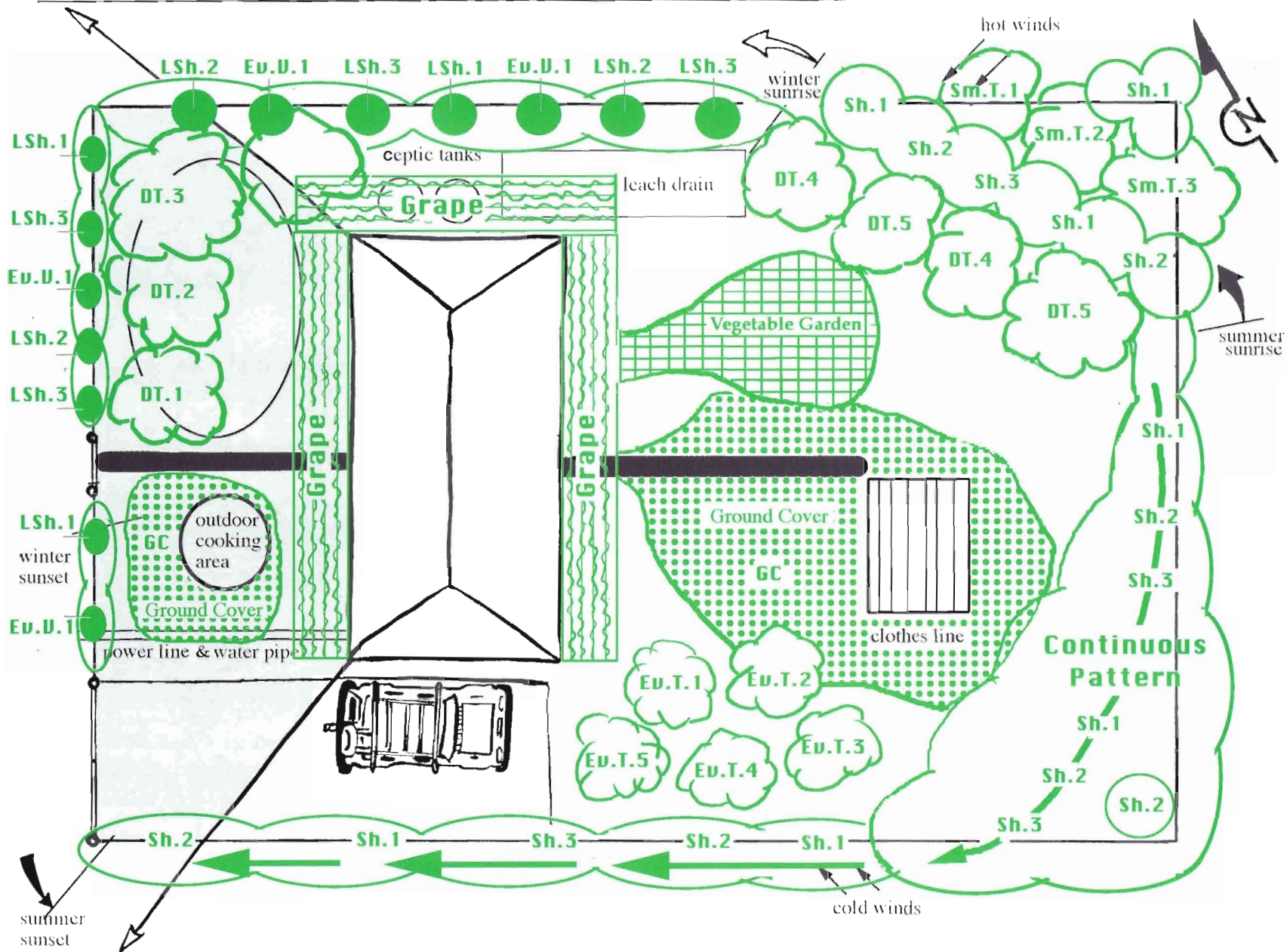
## Things that will improve your soil:

- > compost
- > liquid worm castings
- > animal manures
- > mulch

Feeding plants

TAD091

# Choosing Plants and Planting Techniques



The Warrel's chose plants that would be suitable for the conditions. They focused on hardy vines and trees that would produce fruit and nuts at different times of the year. They remembered that the trees on the north and east side of the yard needed to be deciduous.

## Key

- Ev.T = Evergreen tree
- DT = Deciduous tree
- Ev.V = Evergreen vine
- DV = Deciduous vine
- Sm.T = Small tree
- SH = Shrub
- LS = Low shrub
- GC = Ground cover

Plan view showing planting layout

# Choosing Plants and Planting Techniques

After speaking to their community's **Project Officer** the Warrels chose the following plant species:

## Native Plants

### Small Trees (Sm.T)

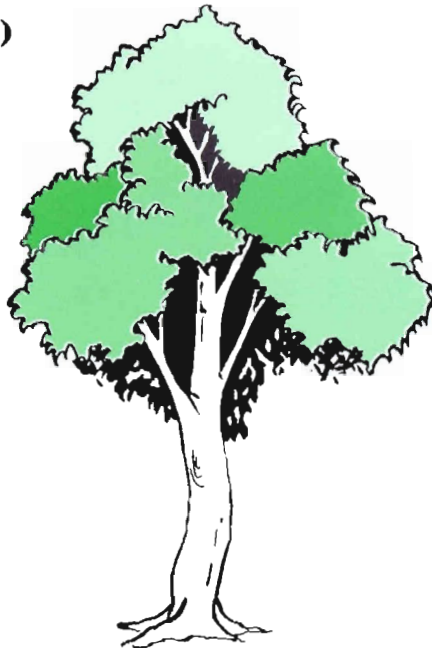
- Sm.T 1. Acacia aneura (Mulga)
- Sm.T 2. Acacia kempiana (Wichetty Bush)
- Sm.T 3. Brachycton gregorii (Kurrajong)

### Shrubs (Sh)

- Sh 1. Acacia victoria (Wattle)
- Sh 2. Atriplex nummularia (Old Man Salt Bush)
- Sh 3. Senna artemesiodes

### Ground Covers (GC)

- Lippia spp.



## Exotic Plants

### Evergreen Fruit Trees (Ev.T)

- Ev.T 1. Guava
- Ev.T 2. Feijoa
- Ev.T 3. Lemon
- Ev.T 4. Mandarin
- Ev.T 5. Orange

### Deciduous Fruit & Nut Trees (D.T)

- D.T 1. Almond
- D.T 2. Mulberry
- D.T 3. Pistacio
- D.T 4. Fig
- D.T 5. Pomegranate

### Evergreen Vines (Ev.V)

- Ev.V.1. Passion Fruit
- Ev.V.2. 7 Year Bean

### Deciduous Vines (D.V)

- Grape

### Low Shrubs (L.Sh)

- L.Sh. 1. Cape Gooseberry
- L.Sh. 2. Rosemary
- L.Sh. 3. Lavender

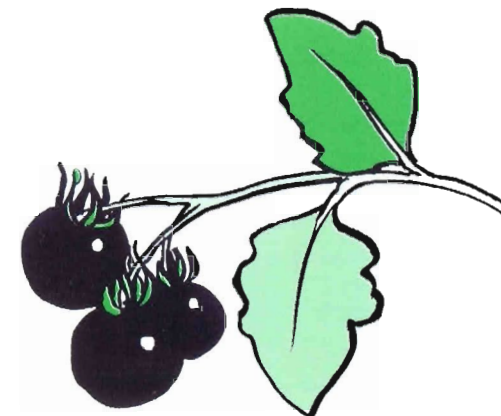
## Vegetable Garden

### spring/ early summer

- Tomatoes
- Capsicums
- Eggplants
- Jerusalem Artichoke
- Corn
- Silverbeet
- Sweet Potato
- Beans
- Basil

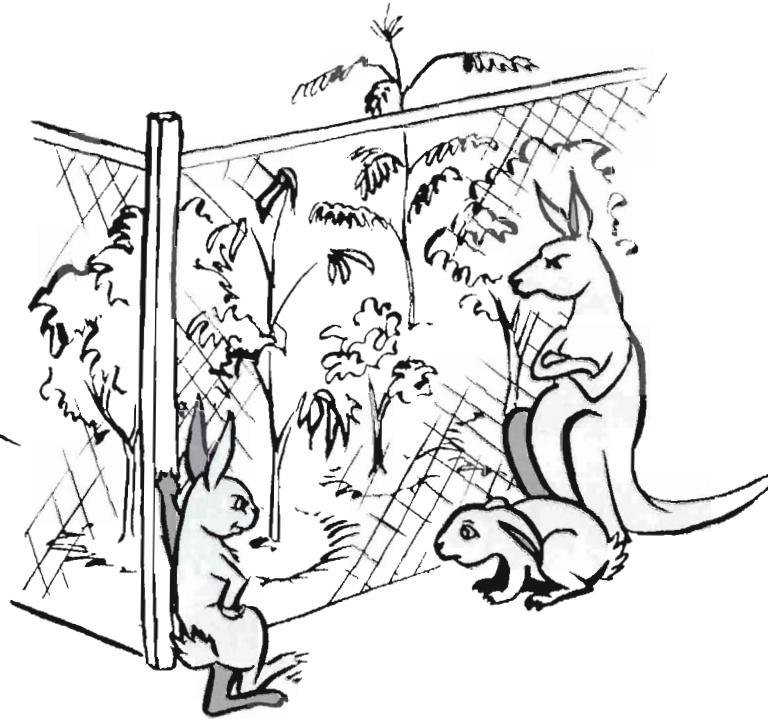
### autumn/ winter

- Lettuce
- Spinach
- Potato
- Cabbage
- Beans
- Carrots
- Radish



# Choosing **Plants** and **Planting** Techniques

Since we're working in our local environment, let's plant as many endemic species as we can.



## **Remember:**

Winds can blow over tall trees that are planted in shallow soils, so keep the height of your evergreen windbreak trees to a 5 m maximum.



Fences can be great supports for growing plants.

## **Your Language for:**

- annuals \_\_\_\_\_
- perennials \_\_\_\_\_
- endemic \_\_\_\_\_
- seedling \_\_\_\_\_
- seed \_\_\_\_\_

**Fences are very useful at protecting young plants from unwanted visitors.**



What a lovely assortment of vegies we have here Freda.

Mum, I reckon that if we look after these vegies well enough, they'll flower and seed and self sow.



## Choosing Plants and Planting Techniques

Vegetable **Seeds** and **seedlings** need to be planted differently.

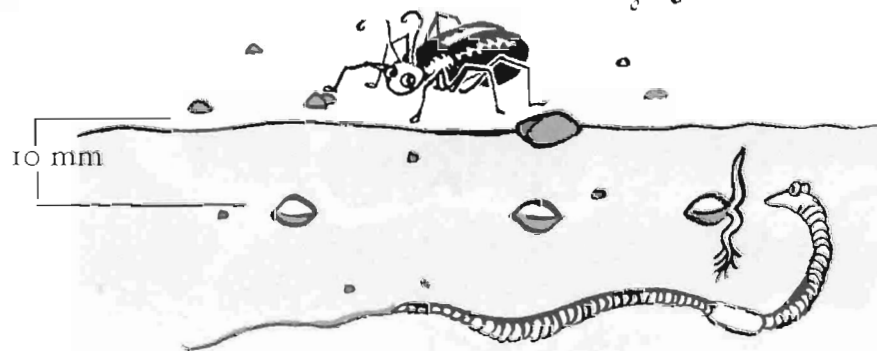
### Seedlings:

- remove from tray or container and gently **tease roots** if they are bound; carefully plant into **loose**, free draining, **cultivated soil**;
- ensure that the roots are properly covered with soil and the seedling is **upright** and not smothered;
- **water** well immediately and keep moist.

**NB: Plant seedlings in the cool of the day.**

### Seeds:

- plant seeds **directly** into free draining, cultivated soil;
- sow to a depth of **10mm** and gently cover with soil;
- **water** well and keep moist.

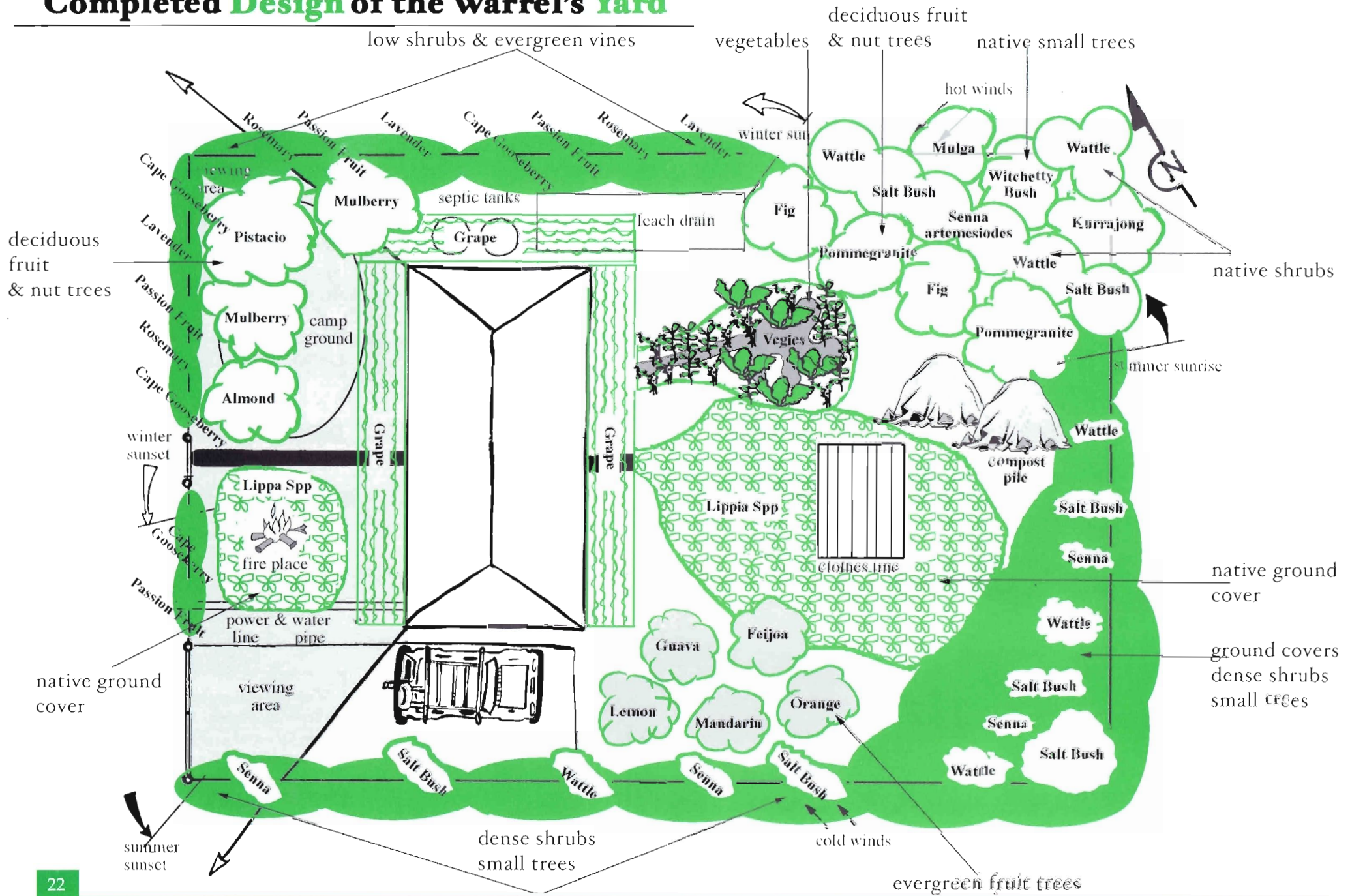


### Remember:

That annuals are seasonal and need more care. So keep the annual garden small.

Naming and using plants	TAD088
Growing Plants	TAD089
Nursery and Garden	
Structures	TAD092
Lawn and Grass Care	TAD094
Growing Vegetables	TAD095
Growing Fruit Trees	TAD096

# Completed Design of the Warrel's Yard



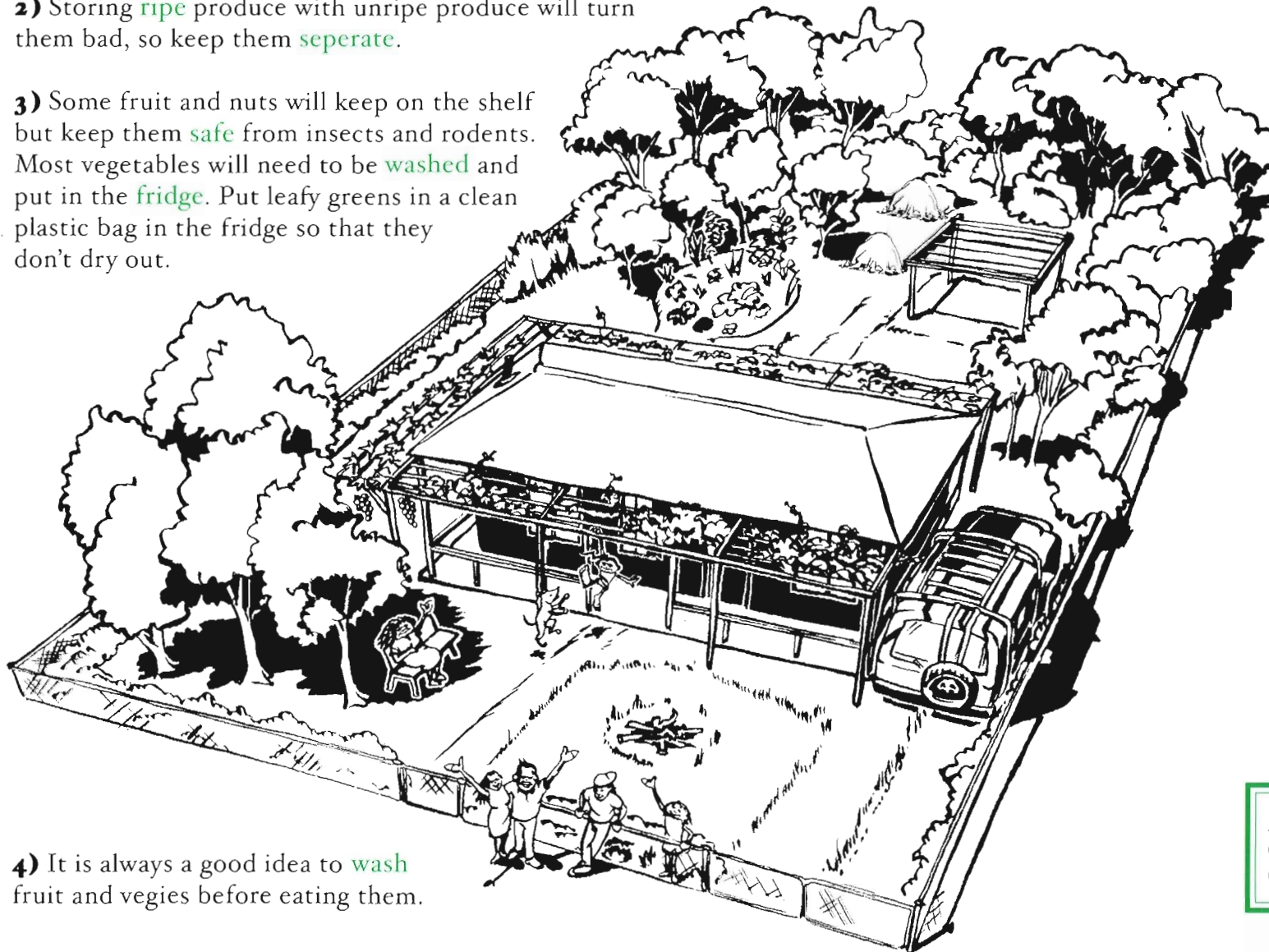
## Some Hints for Food Storage

1) Fruit and vegies are the healthiest and tastiest when first picked from the plant, so try and **pick** them only when they are **ready** and you need them.

2) Storing **ripe** produce with unripe produce will turn them bad, so keep them **seperate**.

3) Some fruit and nuts will keep on the shelf but keep them **safe** from insects and rodents. Most vegetables will need to be **washed** and put in the **fridge**. Put leafy greens in a clean plastic bag in the fridge so that they don't dry out.

4) It is always a good idea to **wash** fruit and vegies before eating them.



## Maintenance Chart

1) **Check** all the irrigation lines each week.

2) **Flush** lines & **filter** each month

3) Apply **compost** to garden areas, vines and fruit trees in **Spring** and **Autumn** before the new seeds and seedlings are planted. Also apply pelletised poultry manure at this stage.

4) **Collect** fallen spoilt fruit and vegetable matter and add it to the **compost** pile.

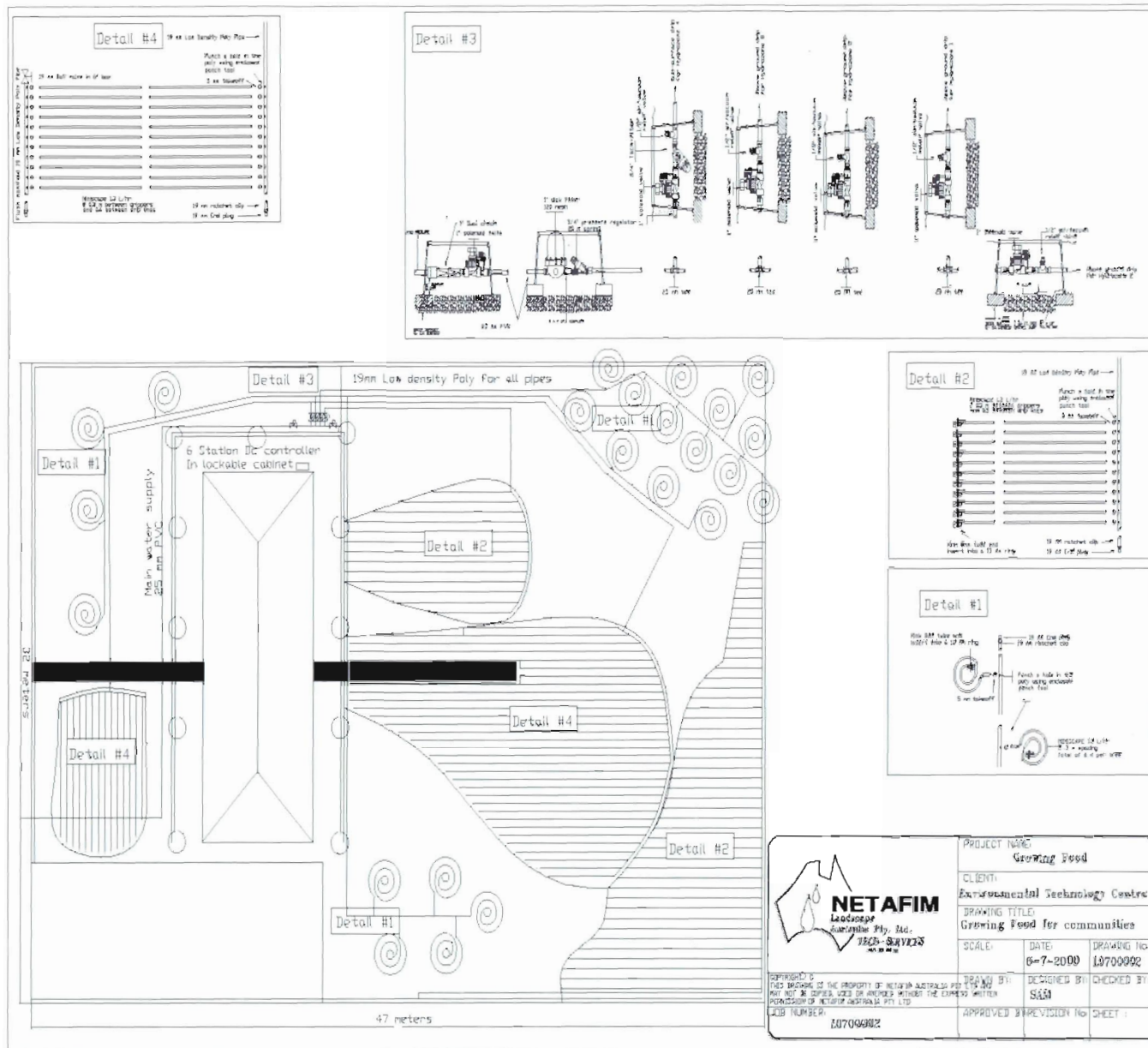
5) Keep the vegetable garden "**weed free**". - add weeds to the compost pile.

Maintain a Home Garden	TAD094
Growing Vegetables	TAD095
Growing Fruit Trees	TAD096

# Appendix I - Irrigation Guide

## List of Material required

DESCRIPTION	CODE #	QUANTITY
1. Miniscape 1.3 L/hr @ .3 m spacing (LQM9-17B030)		1200 m
2. 5 mm takeoff for the Miniscape (LT00505)		100 u
3. 19 mm Low density Poly Pipe		350 m
4. 25 mm PVC class 12		50 m
5. 3/4" techfilter remove couple of disks (L09-TF-07-120)		1 u
6. 3/4" Pressure regulator with 20 m spring (L07-PR07-1-20)		1 u
7. 1" Aquanet DC Valve (LNETAFI1-25-DC)		6 u
8. 1" Arkal disk filter 120 mesh (L1311-1120)		1 u
9. 19mm Ball Valve (LV20)		2 u
10. Miracle 6 station DC controller (LMIRACLE-6-DC)		1 u
11. Lockable cabinet for the miracle (25-MRP-PROF-CAB)		1 u
12. Punch tool (L997000)		1 u
13. 1/2" vacuum breaker (L23N00G-04-05)		5 u
14. 19 mm tall x 3/4" BSP male director		10 u
15. 19 mm barbed Elbow		3 u
16. 19mm line 1/2" BSP female branch		5 u
17. 19mm End Plug		8 u
18. 19mm ratchet clips		50 u
19. 19 mm barbed Tee		2 u
20. 1" dual check		1 u
21. 1" BSP female x 25 mm PVC connector		2 u
22. PVC tee 25 mm		4 u
23. PVC Elbow 25 mm		2 u
24. 1" BSP male x 25 mm PVC connector		7 u
25. 1" BSP Female to 3/4" male reducer		1 u
26. 1" BSP socket		2 u
27. 1" BSP Nipple		2 u



**NETAFIM**  
Landscape  
Irrigation Pty. Ltd.  
1800 800 723

PROJECT NAME: Growing Food  
CLIENT: Environmental Technology Centre  
DRAWING TITLE: Growing Food for communities  
SCALE: DATE: 06-7-2000 DRAWING NO: 10700002  
DESIGNED BY: S&M  
CHECKED BY:  
APPROVED BY: PREVISION NO: SHEET:

APPROVED BY: [Signature]  
DESIGNED BY: [Signature]  
CHECKED BY: [Signature]  
APPROVED BY: [Signature]

10700002

## Appendix 2 - Western Australian Regional Contacts and Suppliers

### **Ngaanyatjarra Lands**

#### **Bryan McKain (Permaculture planning support)**

Alice Springs  
Telephone 08 8950 1711

### **Ro McFarlane (Land Use Planning)**

Warburton  
Telephone 08 8954 0044

### **Ngaanyatjarra College (Horticulture)**

Warburton  
Telephone 08 8956 7531

### **Rainbow Reticulation (Irrigation supplier)**

Alice Springs  
Jim Egan  
Telephone 08 8953 0155

### **Goldfields**

#### **Eastern Goldfields Prison Nursery**

Kalgoorlie  
Telephone 9093 2111

### **Waldecks Garden Centre**

Kalgoorlie  
Telephone 9021 8477

### **Mukinbudin Trees & Wildflowers**

Telephone 9047 140

### **Kalgoorlie Campus Curtin University (Horticulture)**

Brian Ferguson  
Telephone 9088 6871

### **H & H Kalgoorlie (Irrigation supplier)**

Trish Moore  
Telephone 9091 8620

### **South West**

#### **Environmental Technology Centre (MUPETS)**

Murdoch University  
Telephone 9360 6457

### **Fremantle Community Garden Centre**

Telephone 9430 4535

### **APACE Nursery**

North Fremantle  
Telephone 9336 1262

### **Men of the Trees Nursery**

Hazelmere/Midland  
Telephone 9250 1888

### **CALM Nursery**

Narrogin  
Telephone 9881 1113

### **Katanning TAFE (Horticulture)**

Telephone 9821 4146

### **Murdoch TAFE (Horticulture)**

Telephone 9310 0444

### **FIT Enterprises (Irrigation Suppliers)**

Telephone 0403 175 341

### **Midwest**

#### **Yilgarn Traders (Permaculture design, training and nursery)**

Geraldton  
Julie Firth  
Telephone 9938 1628

### **Carnarvon TAFE (Horticulture)**

Telephone 9941 2579

### **Gascoyne Essential Service (Irrigation Suppliers)**

Mike Parry  
Telephone 9944 1384

### **Great Northern Rural (Irrigation Suppliers)**

Tony Prosser  
Telephone 9964 1274

### **Pilbara/Western Desert**

#### **Arid Tropical Permaculture**

Halin Orion & Emma Stock  
Telephone 9189 7068 (Wittenoom)  
Telephone 9175 5546 (Newman)

### **Pundulmurra College (Horticulture)**

South Hedland  
Telephone 9158 5600

### **TAFE (Minyrmarghali Mia) Roeburne (Permaculture)**

Telephone 9182 0660

### **H & H Port Hedland (Irrigation Suppliers)**

Lisa Maniapoto  
Telephone 9172 1585

### **Kimberley**

#### **TAFE Halls Creek (Horticulture and Permaculture)**

Telephone 9168 6412

### **TAFE Broome Horticulture**

Telephone 9192 9100  
**Aquaculture**  
Telephone 9192 9141

### **Flame Tree Nursery**

Kununurra  
Telephone 9168 1067

### **Kimberley Stock-Oliver (Irrigation suppliers)**

Kununurra  
Telephone 9353 4988

### **Derby Building Supplies (Irrigation contractor)**

Derby  
Geoff Haerewa  
Telephone 9191 1537

### **Just Add Water (Irrigation suppliers)**

Bill Rucks  
Telephone 9193 1225

National clearinghouse for all information on Permaculture and Horticulture  
**Green Harvest (free catalogue)**  
Telephone 07 5494 4676  
(They cannot send seeds or plants to Western Australia.)

## Appendix 3 - Further Reading

### ***Plant Life of Western Australia.***

**John S. Beard, 1990. Kangaroo Press, NSW.**

This excellent region by region description allows the reader to quickly determine their local soil, vegetation and rainfall conditions. Apart from the necessity for on-site observation it allows appropriate native species to be selected for windbreaks, revegetation, green manure, etc.

### ***Permaculture Garden Guidelines and Species Lists for "Hot Semi-arid Coastal Regions".***

**Julie Firth, 1993. Yilgarn Traders, Lot 12 David Road, Waggrakine (via Geraldton) 6530.**

Julie Firth has assembled lists of useful species that should be considered when designing your landscape.

### ***Food from Dryland Gardens: An ecological, nutritional and social approach to small-scale household food production.***

**David A Cleveland & Daniela Soleri, 1991. Centre for Food, People and Environment; 344 South Third Avenue, Tucson, Arizona, USA.**

The first part of this comprehensive book includes an assessment technique by means of an annual calendar (p57) which includes climate, social activity, human sickness cycles and garden activities. In Part II a large amount of information is provided on plant biology and management. There is a useful guide to calculating water requirements (p198) and frequency of application (p202) and water harvesting techniques are explained.

### ***Getting Started in Permaculture***

**Ross and Jenny Mars, 1994. Candlelight Trust, 100 Falls Road, Hovea WA 6071**

This user-friendly little manual is, as the title suggests, a great way to start off a home garden with a range of practical, organic techniques that typically make use of recycled materials.

### ***Permaculture Two: Practical design for town and country in permanent agriculture.***

**Bill Mollison, 1979. Tagari Publications, Po Box 1, Tyalgum NSW 2484. See Chapter 5 Design for Difficult Climates, 5.1 Arid Lands pp56-84.**

This material was prepared especially after experience with Aboriginal communities. Accordingly, many of the techniques are directly applicable to many of the dryland Aboriginal settings. Home gardens, broadscale plantings, water harvesting, livestock are all described and a list of useful species is given.

### ***Permaculture: A designer's manual***

**Bill Mollison, 1988. Tagari Publications, Po Box 1, Tyalgum NSW 2484. See Chapter 11 Dryland Strategies, pp 308-410.**

Commences with detailed climatic analyses of deserts, many water harvesting techniques and housing before moving into desert gardens. Plant themes and animal systems are described.

### ***Small-Scale Farming and Horticulture: Some theories and strategies for organic growers.***

**Jeanette Conacher, 1988. Organic Growers Association WA (Inc.), PO Box 213, Wembley WA 6014.**

This small, practical, local publication provides useful information on fertilisers, compost, pests and weed control while at the same time presenting a convincing case for organic agriculture.

### ***Earth Users Guide to Permaculture***

**Rosemary Morrow**

Another excellent and very practical booklet on permaculture with great ideas and illustrations.