What are wicking beds and why would I use them?
Wicking bed systems give us self-watering, productive and protected places to grow plants, and are great for growing fruit, vegetables and herbs. They are in essence a garden bed built over a water reservoir; with water wicking up from the reservoir into the soil to where your plants use it – at the roots.

Why use wicking beds?
Wicking beds, a concept developed by Colin Austin, are highly water efficient as plants are watered from below by capillary action. Water wicks up a certain height – about 300mm and the moisture levels reduce up the soil profile. This leaves the surface fairly dry which reduces evaporation – more food with less water!

They are minimum impact, transportable (depending on size), can be made easily and cheaply to any size from a range of materials, allow you to grow more in a smaller space (and with fewer resources), and can be installed on any flat surface including a concrete driveway, couch lawn or area affected by tree roots or contamination.

Different height beds can be used for different purposes: shallower for seedlings, deeper for vegetables.

Wicking bed materials
Materials include, for example:

- framework: sleepers, fence palings, veggie box, or an old bath tub (you need sturdy sides)
- waterproof lining to line inside the container base and sides (200 µm black plastic) for reservoir base and sides
- pipe: Ag pipe or 25mm pipe and hose, for water inlet and drainage
- reservoir: washed river sand, 6mm road base, pea shingle, scoria, straw or autumn leaves, or similar
- geotextile: cut to size or sugar cane mulch
- growing medium: lightweight free draining vegetable mix, sandy loam, compost (or mixture)
- Mulch: eg pea straw, sugar cane, eucalypt
- Worm tower tube or tub and worms
- Plants
Putting it together

The following pictures illustrate just one of many methods:

1. Level the site so water doesn’t pond at one end.
2. Construct the framework, and place in situ.
3. Put down a layer of sand to give a smooth level base and tape over sharp bits or bolt ends to protect the plastic liner.
4. Line the inside with plastic sheet to prevent water leakage, taking care not to puncture it.
5. Drill a hole through the wall just below the level of the reservoir, inserting a short length of 19mm tube for drainage/water level control.
6. Place the ag or PVC pipe along the base and up the side to supply water.
7. Carefully add sand, scoria, gravel to a maximum 300mm deep, depending on the height of your container (forming the reservoir). Cover it with a single layer of geotextile or sugarcane mulch to segregate soil from reservoir.
8. Fill the base with water until it flows out of the overflow pipe.
9. Add soil – a lightweight free draining veggie or planter box mix or sandy loam works best, being fine enough for the wicking action to work. Clay soil is too fine, tending to compact.
10. Install a worm house and worms, and feed them.
11. Mulch it and plant your veggies!
12. Water, as needed, via the inlet pipe until water runs out of the outlet drain – perhaps weekly in summer, less frequently the rest of the year.
13. The repurposed polystyrene box, pictured right, shows the filler pipe and drainage hole.

Wicking worm bed

Worms can live free or you can make a nifty worm farm in a tub or from a length of drainage pipe, drill a few holes in the side, and stand it partially buried in the wicking bed. Pop food scraps in the top for the worms, and put a lid on. ‘Composting’ this way gives you a constant evenly spread supply of castings and worm juice through the bed.

Keeping it organic

The soil in the bed is not in contact with the natural ground, so you can maintain the soil biology in good order by adding mulch, compost and perhaps the occasional shovel full of soil from elsewhere in your garden, and letting the worms work their magic.

Further information

There is so much information on the internet – search for wicking beds, wicking pots or wicking worm bed. For example:

- www.wickingbed.com
- www.sgaonline.org.au/?p=6618
- www.milwood.net/2010/05/11/how_to_make_a_wicking_bed/
- www.urbanfoodgarden.org/main/wicking-beds/wicking-beds.htm
- www.permaculturenews.org/2011/06/20/from-the-bottom-up-a-diy-guide-to-wicking-beds/