

A Garden Story



Water, water everywhere!

When I moved to Worthing in the Summer of 2017, I was looking forward to walk out of the back door of my flat into a manageable little back garden oasis. However, I soon discovered that my dream, and half-baked plans were about to be shattered. I realised that maybe I had been misled on a few vital points, such as the potential effect of surface flooding on the type of clay soil the house stood in, and that the dampness problems the house was suffering from had been well hidden. It all broke through in the Autumn, when coming back from a few days away I discovered black mould climbing up the walls of my bedroom and under my bed, and then a little while later, in another room, the mould starting to grow behind the wallpaper. The flat atmosphere was permanently damp, the curtains had mould at floor level, and it smelt.

Contributory factors at the time had been a very wet Summer and main's water pipes leaking, in 3 places outside the property. The house and garden are situated very slightly lower than the road, and being so close to the sea front, there is hardly any slope all round. Actions indeed were required, it was time to ask for expert advice.

Air bricks were added, checking the spaces between the bricks for debris, water pipes replaced, then observation began. I studied local history, looked at water courses maps, talked to neighbours, visited the open eco-houses, watched drains and puddling outside, noticed the previous attempts at dealing with water outside the house. A hole was made in the back garden, to discover what the subsoil was like: it was builder's rubble for about a meter deep, down to the clay level where water was hardly draining at all.

Behind an old hedge under the front bay window, some of the brick work was disintegrating due to water that had frozen. It was a painful task to dig out all roots, repair the surface of these bricks, then level the soil and improve the consistency of the existing flower bed below, thus restoring the health of the bed, and the flow of air under the house improved.

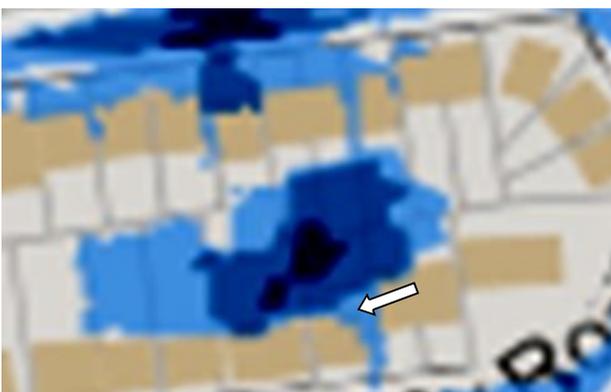
The next step was to change the out-dated central heating system, and that was when it was discovered that the kitchen waste pipe had fallen down and was emptying itself in the soil under the floor rather than in the drains! That was mended.

Down to real action

The rest of the garden, and the drive consisted mostly of old crazy paving, various small stones and concrete. Obviously that meant a very big job if I wanted to bring about an improvement to the drainage.

The new garden planning was started, deciding with Steve White how to channel water, should the need arise, and how to harvest water to the maximum. The surface water maps from the environment agency clearly showed that water could seep down the drive and towards the back gardens, where it had accumulated in the past.

The gutters all needed attention, so they were changed to deeper gutters, and 4 water butts were added to the down pipes. On one of the down pipes the water did not even reach the blocked drain, and the garage down pipe drained to nowhere! "



Environment agency map of surface flooding risk: the back gardens are in the middle, where the dark blue patch is, the surface flood water is predicted to find its way down my drive (bottom right).

The way the drive was.....
very prone to puddles!



Starting work, January 2019:

The Drive

Demolishing the concrete drive, and removing lots of rubble, down to the foundations, before repairing the brick work.



Laying a permeable sheet, topped with scree and heavy soil (hogging) that can retain water when flooding occurs, and laid between 'kerb pavings'. The layer is then compacted and topped by gravel, good enough to hold the weight of a car. The drive is now flat but slopes slightly down from the street level, as before.



The finished drive,
and right, adding some life to it .
However it will take some time to grow!
(June 2019)





The back garden as it was, above. There was crazy paving around the back door, along the garage, under windows.

Below, the first clearing: removing about 30cm of builder's rubble, exposing the foundations, and more rubble below.



Marking the areas of the back garden, with sloped paving, the swale and pond areas, in order to contain excess water in case of flooding. The overflow from the butts are directed into the swale (below).



Respecting the environment

It was important to me to carry on such major work yet avoid environmental damage, as much as possible. The choice of the right contractor was essential: what was to come out or be brought in should be part of a recycling cycle, re-using material whenever possible. That is when Andrew Tomes started the work with his team. The different areas developed organically and creatively as time went on, adjusting to what already existed (mostly in my own pots) and what was available.

A huge amount of rubble was taken out of the drive and back garden (20-30cm deep all round), to be used as base layer for other road work. It revealed the house foundations which were repaired where needed. I resisted suggestions to add concrete, stones or gravel for pathways where it was not needed. Instead woodchips and bark was used, hopefully to provide good compost at a later stage.

Plants and shrubs added as time went by, were chosen for their ability to adjust to their place in shade or sun, and their wind resistance. Many are perennials, needing little watering once established and good for pollinators. Nothing was introduced that would grow too high, as roots were unlikely to develop well due to the sub-soil. I did not restrict the planting to natives, however many garden varieties have developed from what were originally native plants. I have no fixed ideas about what goes with what, and sometimes edibles may fit in well with non-edibles, therefore reducing the risk of uninvited invasive bugs taking over.

The drive

The drive was re-laid using a permeable membrane, 'pavements' were filled with an absorbent mix, then covered with gravel. Flower beds on the side and middle of the drive were left, with soil, to add interest and planting options. Around the house thicker gravel was poured near the repaired foundations for better drainage.

The shady back garden

The vegetation in the back garden near the house showed clear signs of dampness as there is hardly any sun there for half the year. So it was decided to re-surface some of it, creating a slight slope, towards a swale and a pond area. The paved area was laid with at least 25% recycled material and porous filling in-between. On top of the swale, a pond lining was used, then clay, then new soil was added.

Recycled material such as stones, wood, old groynes, were used to landscape and fence the area. And Matt let his creativity flow when it came to laying the attractive paved areas.

Planting began, using plants that could thrive in such environment and did not need much deep root space, as there was little of it. The raised vegetable bed and various other spaces for edibles, including an apple tree, were placed to benefit as much as possible from the light and the sun.

The pond area is designed to catch excess surface water and be mostly self-maintaining. Two overflow pipes from butts direct the potential surplus water to one of the swales. The pond has a clever system to catch or drain excess water at the bottom, with a plug, draining if required into a sump.

The back garden, and the swale taking shape.



The beginnings of a pond, and the foundations for the vegetable boxes.



And now for the **pond** saga: The idea was to have an area where water could accumulate if need be. It is quite deep, about a metre deep with a sump at the bottom. Consequently, to allow wildlife to come in and out, stepping areas were added. The waterproof lining went momentarily over the sump area, and water some times accumulated there. However The pond being mostly made up of clay, with some earth added, deteriorated the first time it rained heavily, and the sides, being too steep started to shrink and slide when dry. So when it was time to test the sump system, thus making a hole for a plug, and inserting the bottom of an old sink with a plug, the water whilst circulating successfully up towards the slightly sloping garden, did not want to stay in the pond for long! Thus we had to move to solution number two: an impermeable resurfacing of the whole lot – twice. The finished pond so far is below (July 19)



The pond in July, just filled, having added aquatic and other plants, and an old bird bath, in the water, to keep them safe from marauding foxes. Now it is waiting time, for newts, frogs, dragonflies to commute from another nearby pond.



The sunny front garden

The last stage of the garden transformation was to design the front garden, a dry, windy and very sunny place, laying on a thin layer of clay soil. That space was at risk both from drought and occasional surface flooding, so a raised rain garden seemed to be a good solution.

A large oval was built, using old crazy paving for its wall, and good absorbent fertile soil was poured in. The path to the front door was re-laid to avoid surface puddles whenever it rained, using the same material as that of the back garden. Flower beds were created along it, using stones recycled from elsewhere. The damaged front brick wall was demolished and many of the bricks were reused. It was replaced by a fence, and gates, some made of recycled wood.

As it was suspected that in the past some of the vegetation had died due to too much water and/or a lack of root space, that was taken into account. The planting so far consists of small shrubs and perennial or hardy plants known to be tough enough to survive the situation and to serve as a frame for later more temporary or fragile planting.

To sum it up

Obviously so much shifted soil from diverse origin -rich organic or sterile leftovers from the ground work, and mixed somewhat haphazardly is not yet a balanced environment, it will take time to acquire its own structure, worms, creepy crawlies and their predators. And I will have to discover its existing weeds as they show up. Worms from my wormery are being added to the soil where it had none. Its fertility PH and moisture retention will vary, and more of my own compost will be added, but so far what is planted in it seems to like it. Birds are coming back, and I have noticed ladybirds, the odd butterfly and many bees. Hopefully the pond will have new wildlife too. In time, the garden should be a resilient one, looking after itself with very little help whatever the weather, and provide foraging opportunities, for animals and humans alike. Finally water will be used economically, via the new water butts linked to the gutters.

I am hoping to add another dimension to that space by creating a little 'hügelkultur' area (an organic mound), but that will take some more time, and will include a bees/bugs hostel.

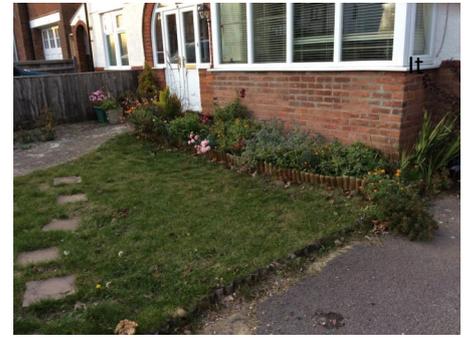
I am indebted to the many people who listened to me and helped me work out what to do:

- R.H. Smith staff for their expertise in rising damp, and kindness.
- Steve White (County Landscapes) who discussed the issues with me and signposted me to Bell Gardens, where Andy Tomes and his fantastic team slaved over the garden work, understanding well my wish to respect the environment. A special thanks to Matt who created the paving.
- Claire Holyoake (regular gardener) who patiently dug out persistent weeds with me and shifted whatever I could not lift, in all weather, and exchanged tips and advice freely.
- Most of all I am thankful to Mick Edwards for his thoughtfulness, the plumbing and miscellaneous never ending repairs he carried out inside and out during the whole process; our conversations led to much understanding and remedial actions.
- My sturdy wooden planters were obligingly made for me by the 'Men in Shed' so I can have plants where there is no soil.
- I do not want to forget my good neighbours who filled me in on their experiences and the idiosyncrasy of this sometimes wet some times dry place.

The front garden as it was, the stepping stones were there to avoid puddles when rains.

Under the window, the bricks have been repaired, the air bricks uncovered, an new planting has started.

The front boundary wall and fence were past their best, they came down with a few kicks!



Below, the front 'lawn' whilst work is ongoing at the back of the house.



The path to the front door, redesigned and set higher, to avoid wet feet on rainy days. The thin layer of grass or stones were removed uncovering more builder's rubble. There was only one easy option left, that is to build a rain garden, recycling material from the garden and elsewhere, then using wood chips and bark. Now on a rainy day, the water stays out, or is easily absorbed instead of travelling towards the overflowing drains on the road. The new fence and gates were made to measure using some recycled wood.



Not forgetting one of the 3 wooden troughs made by the 'Worthing Men in Shed'.