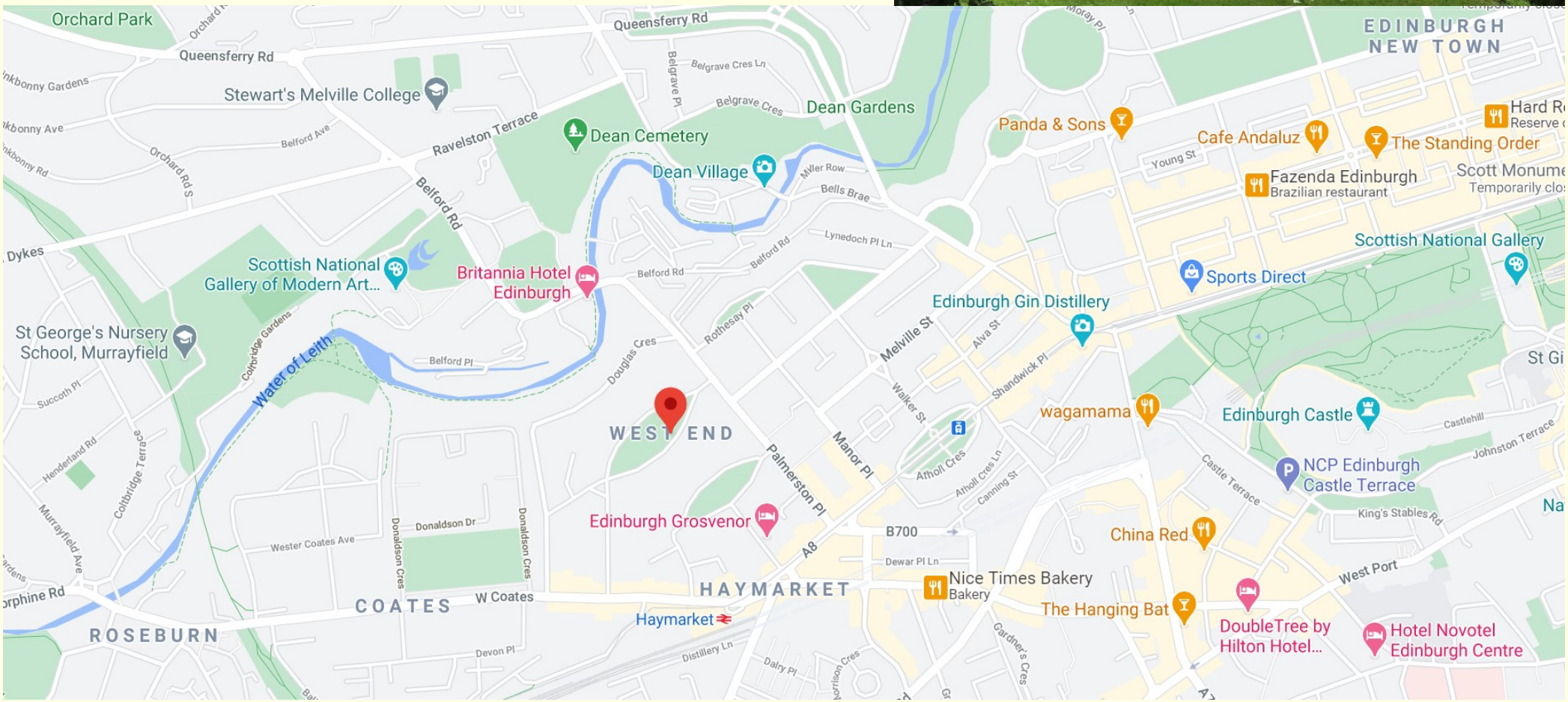
Eglinton Glencairn Gardens, Edinburgh
Design for Planting and Maintenance
Nov 2017 – Aug 2020

Diploma project No 1
Nenya Milne



Client: Eglinton and Glencairn Gardens Association Committee

Brief:

- Improve soil and plant health

- Design planting for under-used beds and borders, while preserving a balance between transparency and privacy offered by the perimeter planting (to discourage vandalism and antisocial behaviour)

- Create an implementation plan and a timescale for the design, with approximate costs



The project's purpose was therefore not to design a 'Permaculture garden,'
but to use Permaculture to offer garden design and maintenance solutions to the client.

The design process used is SADIMET:

Survey
Analysis
Design
Implementation
Maintenance
Evaluation
Tweaking

Since I was commissioned to do this design for a client, originally only the SAD were relevant, while IM existed only in the shape of Implementation and Maintenance plans in the Design.

When later I was hired to implement the project, IMET also came into being.

Brief has been added to the process as it captured the client's expectations & goals.

Survey: Observation and client interview

Raw initial observation:
This is a vast garden enclosed by Eglinton and Glencairn Crescents. During my first visit in late October, the garden was shady and damp, and the many mature trees seemed to dominate while on the ground there were patches empty of any vegetation. The soil appeared lifeless and hard. The perimeter shrubbery looked mutilated by trimming, and unevenly spaced with alternately empty and very densely overgrown areas. Lawn seemed in good overall condition but patchy in shade and around trees; where there were plants in flower beds and borders, they seemed not produce much of a visual impact.

Client interview:
I met with and talked to several committee members inc. the chairman who first got in touch with me. The committee members seemed keen to improve the garden, and willing to put in work to do so (plant trees, weed, etc.). Some voiced dissatisfaction with the 'scorched earth' gardening style of their contractors but were unsure if they could afford anything better: comparatively low cost of the service was an important factor. Many would be willing to contribute plants and would not be averse to spending money to improve planting. The state of the soil in flower beds was a concern since it appeared hard, heavy, and almost unworkable from people's experience of planting flowers.

The client decided to order a design to be ready by the end of December to be put to the committee deliberation in late January. This limited the possibility of much further observation in other seasons.

Survey: Mapping

Base map and scale

I was provided with a map (originally a tree survey map by Donald Roger Associates) with a scale of 1:500 @ A3 (which is unhelpful when working with copies of different sizes!)

My attempts at re-measuring it by pacing were inconclusive (the map evidently got skewed during reproduction into a different size), so I collated those results with measurements from Google Earth –

> 177m x 62m at widest points
> Perimeter length 400m

– to get the scale given in top left corner.

Survey: PASTE

Plants: Many mature and young trees (lime, holly, yew, cherry, cherry plum, whitebeam, ginko, birch, elm, laburnum, etc.), shrubs inc. rhododendron, *Aucuba*, cherry laurel, buddleia, honeysuckle, *Philadelphus*, trimmed holly & privet; 2 large areas of lawn (formerly tennis courts), hedges, several island flower beds and borders along shrubberies. Weeds in paths and in beds (annual grass, dandelion, plantain, groundsel, buddleia seedlings, brambles). Fungi: giant polypore on tree, sulphur tufts, *Pholiota squarrosa* (stumps).

Animals: People (members only!), dogs, birds (blackbirds, finches, tits, dunnocks, pigeons), grey squirrels, bumblebees, slugs, snails, earthworms, occasional NZ flatworm, woolly aphids.

Survey: PASTE

Structures: perimeter railings with 4 pedestrian and a vehicle gate; a network of paths (some gravel, others whindust); Victorian pavilion-like shed, bins (inc. a dog waste bin and recycling bins), fenced play area (wendy house, slide, swings, and sandpit), notice boards, wooden edgings to paths, wrought iron 2D sculptural decorations, water tap point and underground power line (but no power outlet).

Tools (& resources): Tree map and survey; gardening hand tools, petrol hedge trimmer, chainsaw, barbeques, woodchip pile, wheelbarrows, tap and hoses, cardboard from bike shop, plants from members' gardens.

Events: dog-walking, children playing, jogging, summer picnics, fortnightly garden maintenance, painting of railings, repairs to path edgings, occasional committee-organised garden clean-ups, annual tree survey (August) and occasional tree work;
Annual garden party (June) and fundraiser charity parties; From March 2020: alfresco lunches, garden 'offices', socially distanced meetings, birthday parties, and 3 weddings!

Survey: Soil

Other than in areas covered by lawn, the soil was bare and caked into a hard dried cement-like crust (typical of soils with a high **silt** content).
Former use of the garden as a tennis court suggests **compaction** under the grass, but abundance of mature trees indicates that it is not so severe as to inhibit plant growth.
Healthy rhododendrons and other lime-haters suggest an **acidic pH** (or at least not alkaline).

I did not do a conventional soil test to establish pH or the mineral composition, since nothing suggested that these would be the limiting factors for plant growth – especially since learning from Elaine Ingham's work that **problems of any soil type could be remedied with good soil biology**, and that on a microscopic level pH varies to such an extent as to render any spot readings almost meaningless.

Spiral of erosion: more 'work' thrown onto the garden (power tools, removal of 'waste') only worsens soil condition.

Survey: Sectors

Wind: The garden is orientated SW to NE, in line with the prevailing SW winds. Mature trees and dense hedges create wind shelter in most places on the ground (but tall trees themselves are vulnerable.)

Sun/shade: tall buildings on S side and many tall trees make the garden shady in autumn-winter.

In late spring and summer, as I found out later, it is surpisingly sunny except for among thick shrubs and trees, with only dappled shade under most tall trees.

Pollution from roads surrounding the garden on all sides – spray, idling vehicles – is somewhat mitigated by parked cars right by the railings.

Rubbish floats into the garden from recycling boxes and tradesmen's lunches.

People appreciate **views** of the garden from their windows.

Survey: Climate

Rainfall: the most recent MetOffice stats from 1991-2010 give annual figures of 600–700 mm, with 15-20 days of rain of over 10 mm / year, and 150-200 days of rain over 0.2mm / year. The wet and dry periods and their duration are however increasingly unpredictable.

T: T means of are pretty meaningless, given that a resilient design must withstand the extremes, but I was not able to find data on extremes other than from my own observations of app. -13C to +30. The data for grass-level min T for winter of -1 to -2C, and 7-8C for summer may be more telling.

Frost: The yearly figures of 40-60 days of air frost and 125-150 days of ground frost seem outdated, based as they are on 1991-2010 averages. But I have observed frost in the garden in both the winters of 2018-19 and 2019-20, if only on a couple of occasions. At the same time, a tender self-sown shrub *Solanum laciniatum* has so far been unaffected by frost under the dense canopy of hollies.



Analysis: Current maintenance regime does not favour soil and plant health

- Indiscriminate shrub trimming at random times of year often results in cutting off flowering shoots while overly dense shrubs not thinned out and dead wood left in place.
- Mowing with grass clipping removed means the nutrients are not returned to the lawn.
- Leaf-blowing dries out the soil, leading to compaction and rain water run-off, raises dust particles into the air (inc. allergens and dog poo), and produces air and noise pollution.
- Removal of leaves and shrub trimmings means gradual depletion of the garden of nutrients and organic matter.
- Lack of mulches on beds and borders contributes to soil compaction and rain water run-off (producing drought conditions in dry times and water-logging in wet times because of poor soil structure with insufficient spaces for water and air exchange). This tilts the soil life towards anaerobic, which is damaging to most plants.
- Weed-killer is most likely used on paths, negatively impacting water quality and soil biota in the garden.

This maintenance regime is heavy on fossil fuel use rather than on gardening know-how:
the maintenance contractors, chosen for affordability, have no plantsmanship skills –
they don't know how to deal with which shrub and can't tell lovingly planted perennials from weeds.

A lot of heavy and energy-hungry work they put in produces little useful output.

Design

The design focuses on meeting the three original Brief points:

1) Improve soil and plant health;

2) Identify areas for additional planting and produce planting plans and suggestions;

3) Create implementation and maintenance plans for the planting, with a timescale and approximate costs.

Maintenance of the garden was shown to be linked with plant and soil health so the first item in the brief can be reformulated as:

1) Devise a maintenance plan for both new planting and the garden as a whole that would contribute to improved plant and soil health.

Design tools used:

Mapping: using existing maps and additional data for presenting to client, planting maps / schemes.

The timescale uses **Phased implementation.**

Some of the maintenance suggestions rely on **'Do nothing scale' of minimum intervention.**

In terms of **Yeoman's Scale of Permanence**, soils are the fastest to change, which is encouraging in terms of timescale of building up good soils.

One of the main design inspirations has been Elaine Ingham's work on Soil Food Web and the close connections between soil biota and plant nutrition and health.

Hence, I saw restoring soil (micro-)biology as the solution to both soil and plant health problems. Lacking the skills and tools for analysing microbiology directly, I used the methods given in Lewis and Lowenfels' book *Teaming with Microbes* to extrapolate what my observations of visible aspects of soil life (worms, fungi, plants etc.) could tell me about its likely pH, state, and other life forms present in the soil.
For example, trees modify soil pH to more acidic with the help of / while encouraging more fungally-dominated soils, which does not favour grass. Grass prefers a balanced fungal to bacterial biomass ratio; and therefore it's pointless trying to establish good lawn under trees, especially mature ones.

Permaculture principles used in this design (1):

Smallest change for greatest effect (Mollison), or
Slow an small solutions (Holmgren); and

the saying accompanying Holmgren's principle 'Produce no waste' – 'A stitch in time saves nine' seemed relevant here:

Stop doing unnecessary work (indiscriminately trimming shrubs, poisoning weeds, leafblowing) and direct efforts where they are needed: for example, selective pruning at the correct point in the plant growth cycle; weeding / hoeing before weeds set seed; plant at the time of year when rain can keep new planting alive.

Use hand tools where possible; where use of power tools is unavoidable (i.e. where they are 'appropriate technology'), consider switching from petrol to solar-charged electric tools, or reduce the size of the job through design (e.g. lawn is not used as such under trees; consider different planting there).

Design from patterns to details (Holmgren):

Determine overall patterns of planting based on the survey and factors affecting the choice of species (shade-tolerance, long-season interest etc.) before choosing plants that fit the pattern.

Permaculture principles used in this design (2):

Using biological resources and cycling of energy, nutrients, and resources (Mollision); Produce no waste and Value renewable resources (Holmgren):

> Use 'waste' generated in garden maintenance to create valuable biological resources: leaves into mulch or compost, prunings into mulch (or compost chipped branches), use mulching mowing or compost grass clippings. Mulching will help retain water in the garden, boosting soil life through moisture, shade and organic matter both as food and habitat for soil microbes.

Accelerate / Use succession and evolution (Mollission):

> Leave shrubs to regenerate before deciding on additional planting needs in shrub borders; use seasonal growth of plants in planting schemes, e.g. spring bulbs will be succeeded by late leafing out deciduous perennials; evergreen perennials will provide structure throughout the year.

Stacking elements and functions (Mollison):

> Mulching takes care of waste disposal, water conservation, soil life care, plant health and biodiversity / habitat creation in one fell swoop.

Permaculture principles used in this design (3):

Yield is limited by the information and imagination of the designer, and Problem is the solution (Mollison):

> Grow plantsmanship skills to avoid unnecessary work and arrive at creative solutions; garden 'waste' plus lack of mulches together suggest a free and low-work solution to soil problems (also resolving the problem of a mismatch of inputs and outputs).

Edge effect (Mollison):

> The garden is elevated relative to the street level outside, so water and mulches escape outside, creating soil at the outer perimeter where weeds happily grow. Use larger pruned branches and trunks / logs to create barriers along the inner side of the garden perimeter railings to trap mulch and water, and build soil inside the garden. Use that soil for diversifying the ground level planting people can see from outside.

Work with nature rather than against it (Mollison):

> This seems to cover everything, including the slow-to-change people's attitudes!

Permaculture Ethics used in this design

The scope of the project mainly limits it to the ethics of **Earth care** (improving the health of soil and plants, using fewer power tools etc.), but **People Care** is also served by a maintenance practice that is lighter on fossil fuel use, since it creates less noise pollution or noxious fumes. New planting increases biodiversity and enjoyment, also benefitting both people and animals of various sizes.

Fair Shares are harder to apply to a members-only private garden, since it is not a resource available to all. However, without the members valuing the garden and paying an annual fee for its maintenance and development, the garden as a nature and recreation resource would certainly not exist in its current (and rather resplendent, compared to an average Edinburgh city park) form. So the task of this design to improve the long-term viability and appeal of the garden does resonate with the third ethic understood as '**Future Care**'. The less energy-hungry maintenance also reduces its contribution to climate change, thus benefitting all. And the view from outside is something that all passers by can enjoy.

Design: Improving soil and plant health through a more caring garden maintenance regime (1)

Shrubs: leave to regrow for the first year following the brutal trimming regime;

Conduct a survey (producing a map if necessary) to help the maintenance team identify and locate different shrubs and specify required care for different species, for example:

- 'nothing' (apart from removing dead wood, e.g. *Choisya, Eleagnus, Olearia*)
- trimming to shape (shrub hollies, privet, and formal hedges)
- periodic rejuvenation for old *Rhododendron* or *Philadelphus*
- annual cut-down for *Buddleia* and dogwood grown for bright stems in winter
- cut back for *Cotoneaster* and *Lonicera nitida*
- thinning for *Lysisteria* and *Kerria*.

Thin out / remove overcrowded or old hollies.
When replacing or introducing new shrubs (once gaps become apparent following shrub regrowth), choose low- to no-maintenance species or cultivars.
Use prunings from shrubs as mulch under them, and remove excess to where there is lack of mulch, or use for composting.

Watering needs should be reduced once the soil life is reawakened; water mainly to help establish new planting. Rain water should be used if possible (harvest from shed roof).

Design: Improving soil and plant health through a more caring garden maintenance regime (2)

Lawn: mulching mowing and annual aeration; stop 'feeding' with synthetic fertilisers; leave grass a bit longer / mow a bit less frequently at times of year when growth slows down.

- Autumn leaves can be shredded while mowing and left on the grass (excess can be raked off).
- Where grass grows poorly (under trees in shade), switch to perennial groundcovers such as *Vinca, Lamium, Gallium odoratum, Pachysandra* etc.
- Repair patchy areas in sun with clover and other short-sward perennial meadow species (yarrow, self-heal) while also introducing good soil life with compost or actively aerated compost tea.

Flower beds: weed thoroughly before replanting, lifting plants that need to be moved.
When (re-)planting, introduce plenty of organic matter into planting holes and use a mycorrhizal inoculant.

- Mulch planted beds to 5-8 cm depth with compost or composted woodchip (or even fresh woodchip where regrowth of annual weeds is expected, to starve them of Nitrogen). Weed in Apr/May and July/Aug. Renew mulch at least annually, ideally after weeding.
- (Re-)edge the beds where they border the lawn so that the deeper channel around them catches sliding mulch and water and provides a natural barrier for grass.
- Deadhead for special occasions (weddings, parties) but otherwise let plants complete their life cycles.

Design: Improving soil and plant health through a more caring garden maintenance regime (3)

Paths: weed / hoe before weeds become established / have a chance to seed.
Sweep or rake leaves off into the shrubbery as mulch (or compost them).

Compost: establish a site for composting any garden 'waste' that cannot be used as mulch directly (weeds, some grass and autumn leaves); use woodchip for C to balance the N.

- When selecting the site, consider proximity of water and good access. Turn frequently if faster processing is needed, and at least occasionally for good aeration. Use a compost thermometer to gauge T within the pile.
- Open pile rather than containers is recommended for good access, aeration, and because volumes of material are variable and unpredictable.
- Use finished compost for mulching, inoculating beds and lawn with good soil microbiology, and for plant propagation.

Tree work is arranged separately and was not subject to this design.

Composting dog waste was for the present left out of its scope as well, so as not to alienate the more conservative committee members.

Design: Identify areas for additional planting and produce planting plans

These are the areas identified during survey as needing additional planting (see map on the next slide):

1. Former composting site affectionately called 'the Midden', app. 24 by 12 m
2. 'Birdbath bed' – a formal-looking circular island bed with a stone birdbath, 3.5 m across
3. 'Pavilion bed' – a smaller circular bed closest to the shed, 2.3 m across
4. 'NE bed' – an island bed at NE end, with a young elm at one end, 3.5-4 m across
5. 'Small bed' – a small island bed, 1.5 by 1.7 m
6. 'Magnolia bed' – an island bed with a young magnolia, 1.8 by 2 m
7. A tiny 'Larch bed' featuring a tree stump, app. 1.5 by 1 m
8. App. 3-m stretch along the edge of the 'North Rhododendron bed', under 1 m wide
9. Edges of the 'South Rhododendron bed' which itself is about 4.5 by 10m
10. 'Ginko bed' – app 2.5 m-wide and 10 m-long edge of the shrubbery opposite a Ginko
11. 'Clematis bed' – app. 9 by 3.5 m bare-ish edge to a dense shrubbery with an overhanging clematis
12. Shaded pink - The obvious gaps in shrubbery that could be filled with new shrubs
13. Marked purple - Bare areas around trees that could be planted with ground-cover plants
14. Shaded brown – Areas of patchy lawn that could be converted to perennial ground-covers.

Planting suggestions were then presented by area, accompanied by planting schemes where needed.

Design: Identify areas for additional planting and produce planting plans: Map

Design for vacant and under-used planting areas

For Eglinton Glencairn Gardens

December 2017

Map showing designed areas:

- Highlighted yellow: Vacant areas or under-used flower beds (Design parts 1-11)
- Shaded pink: gaps in shrubbery (Design part 12)
- Circled purple: Bare areas around tree trunks (Design part 13)
- Shaded brown: Lawn in poor condition (Design part 14)

Scale (app.) 0 5 10 15m

Using tree survey map by Donald Roger Associates (2016)

The first 4 areas (1 – 4) are designed in detail, with accompanying maps. (See the next slides.)
The rest are designed in broader brush strokes, offering plant lists and suggested planting locations / order within the areas, with enough detail so that planting can be carried out by someone else.
Here is an example of design for combined areas 7 and 8:

7. Larch bed with a stump + 8. N Rhododendron bed

The Larch bed 7 with a stump is a bit small to fit any spectacular planting, although the stump offers good potential for this. The beds 7 and 8 are very close together and the lawn between them is poor. I suggest uniting the beds, creating a new outline of lawn edge and enlarging the new bed slightly to an attractive wavy rounded shape, extending it a little around the stump.

Implementation: create a new bed outline incorporating beds 7 and 8 and lift turf. Lift the existing *Geranium* and move to bed 10. Weed the bed. Fill the gap in the shrubs to the right of the wrought iron decoration with any *Rhododendron* or *Kalmia* with a height and spread no more than 1 m (e.g. *Rhododendron* 'Canzonetta', *Kalmia latifolia* 'Little Linda'), incorporating organic matter and special Rhododendron mycorrhizal inoculant into the planting hole. Plant *Asplenium* into the stump and flank the stump with *Helleborus*. Under the Larch, intersperse *Lysimachia, Primula,* and *Cyclamen*. Where taller plants fit around the tree, to the front of the decoration, and in the middle of the new bed, intersperse the evergreen *Liriope* and *Epimedium* (especially along the edges) with the deciduous *Geranium* and *Hosta*. Plants required:

Asplenium scolopendrium, Hart's tongue fern (H and S 30-50 cm), evergreen; 1 plant.
Cyclamen hederifolium, Ivy-leaved cyclamen (H 10 cm, S 15-25 cm), white to pink flowers, Sep-Mar, variegated silver leaves die back in summer. 3-5 plants.
Epimedium perralderianum, Bishop's hat, Barrenwort (H 30 cm, S 38 cm), yellow flowers, Apr-May, bronze-green foliage, evergreen.
Helleborus orientalis, Lenten rose (H and S 45 cm), white, pink or purple-red flowers, Feb-Apr, semi-evergreen foliage. 2-3 plants to flank the stump.
Hosta fortunei, variegated, e.g. 'Albopicta' (H and S 60 cm), lilac flowers, Jul, creamy variegated leaves.
Geranium phaeum, dusky cranesbill (H 60 cm, S 35-50 cm), dark purple glowers, Jun-Jul, over clumps of green foliage lightly mottled brown.
Liriope muscari, Lily-turf (H and S 35 cm), purple flower spikes, Aug-Nov, and grass-like evergreen foliage.
Lysimachia nummularia, Creeping Jenny, form with golden foliage (H 5-10 cm, S 30-50 cm), yellow flowers, Jun-Jul. Plant under the tree; 2-3 plants.
Primula x pubescens, Primrose, e.g. 'Argus' (H and S 10-15 cm), purple or magenta flowers with contrasting centres, Mar-May. 5 -7 plants.
Bulbs: any spring-flowering bulbs around the deciduous *Hosta* and *Geranium*.

Estimated plant costs for combined beds 7 & 8: £160

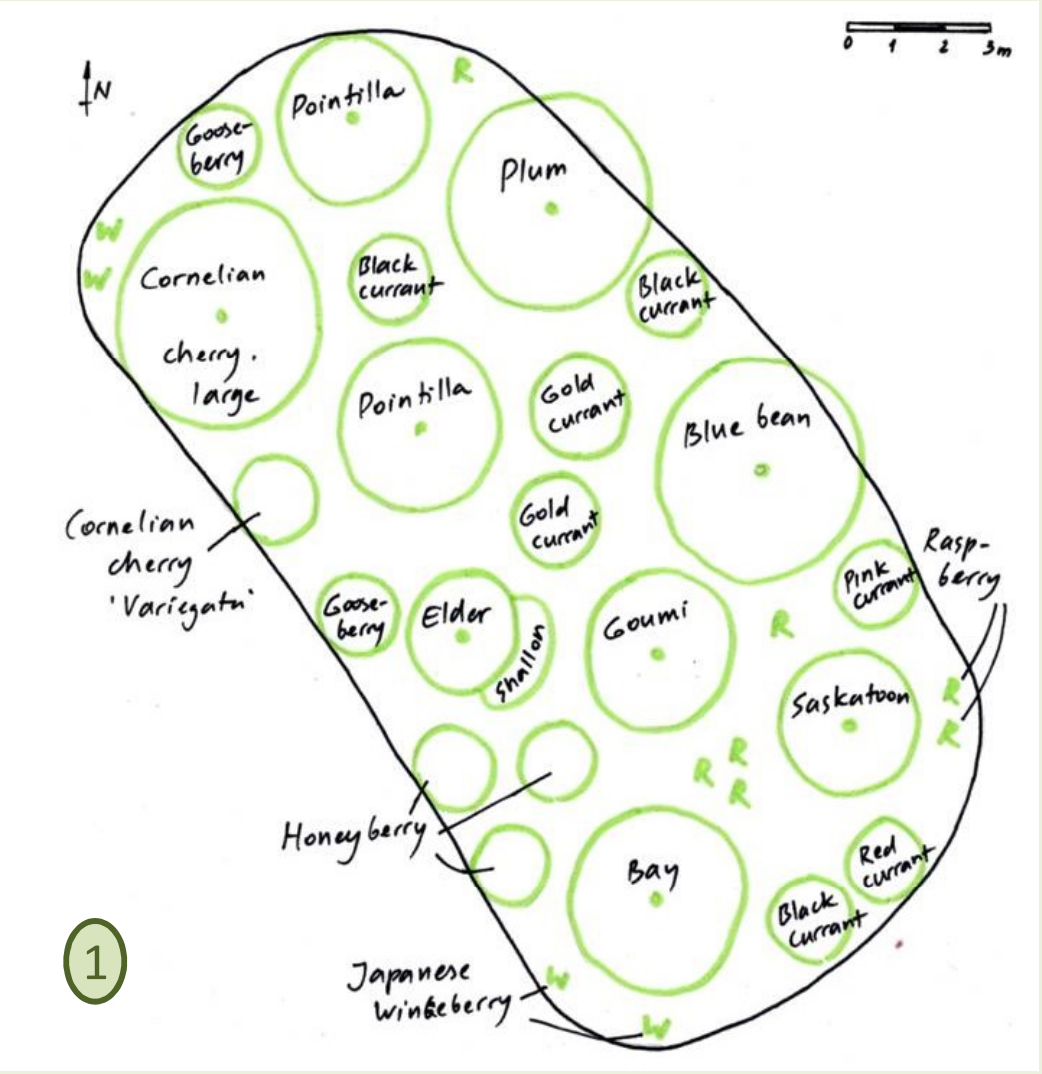
Design for Area 1:

The 'Midden' to an Edible Forest Garden

The site is relatively shady so the choice of (lower) canopy species was determined by shade tolerance. I used P. Whitefield's 3-layer Forest Garden system for ease of presentation to the client.
Tree and shrub layer are shown here; herbaceous layer is suggested as a list of possible perennial edibles with some notes about them.

An optional low multi-species shrubbery edge was also proposed to stop dog incursions into this area of 'safe' edibles.

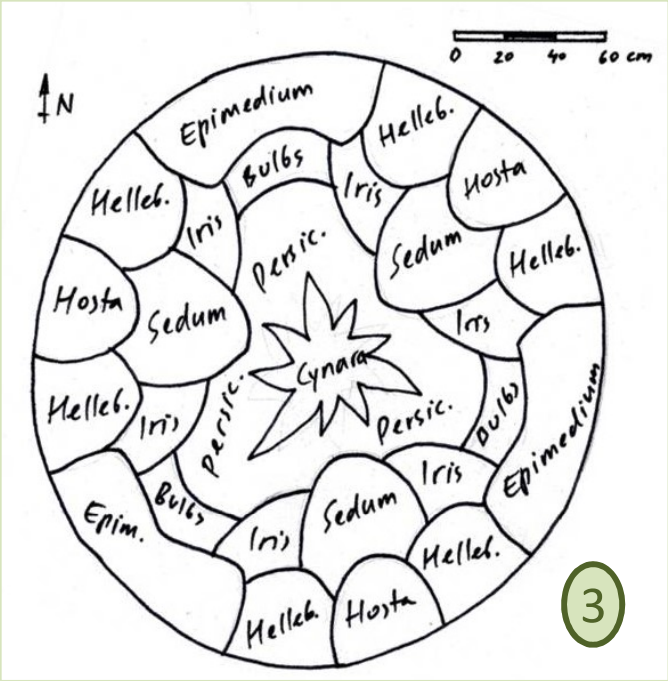
The cost of plants for the forest garden (without the optional edge) was estimated at app. £1000 (tree and shrub layers app. £600 and perennial vegetables £400).

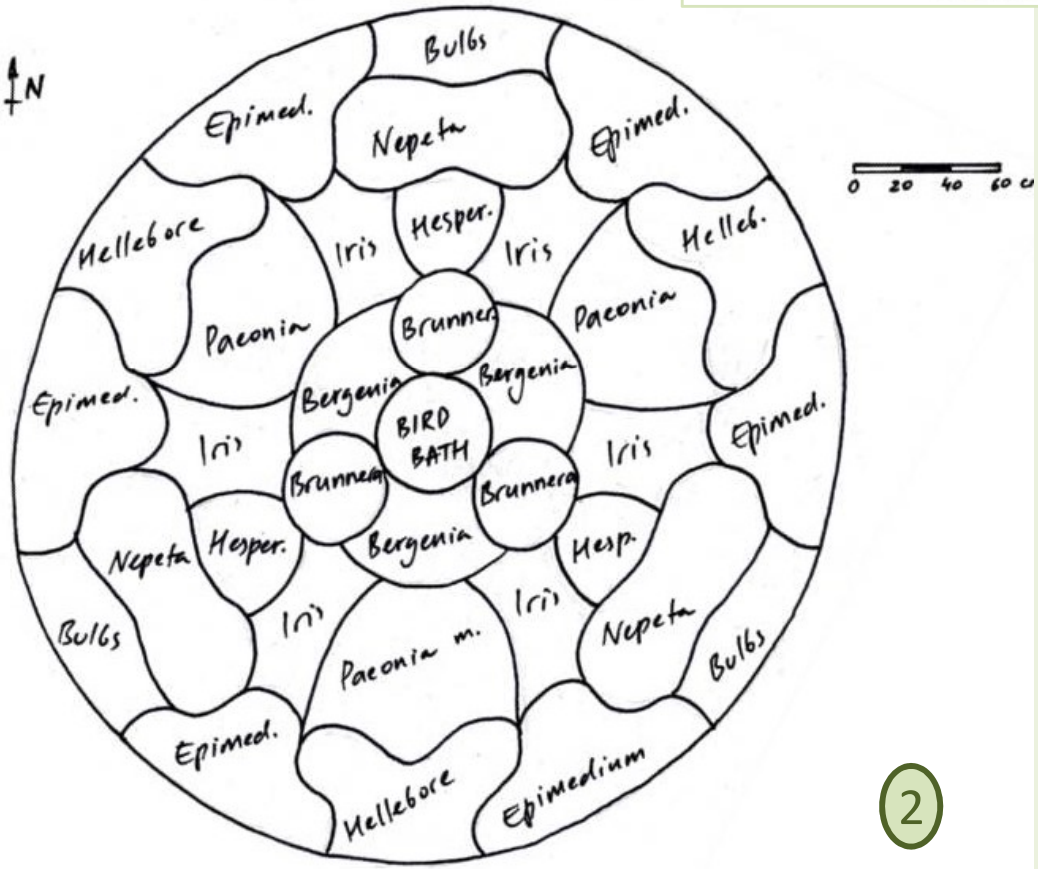


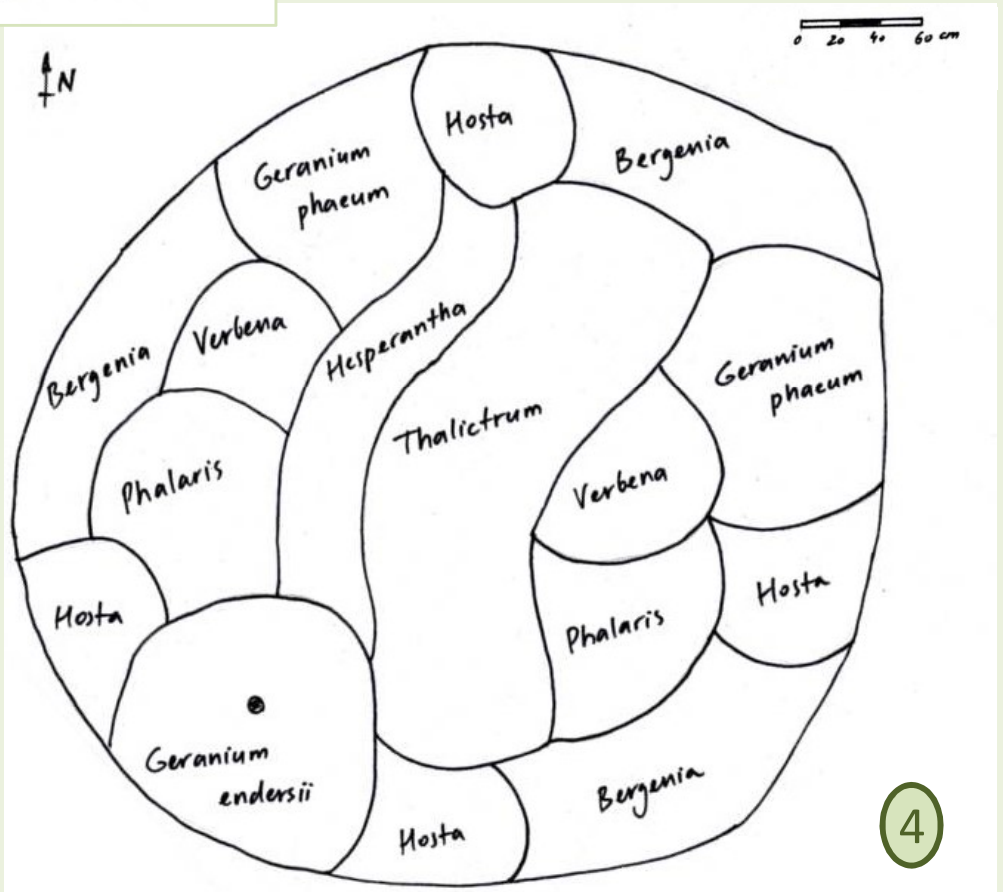
Phased implementation was offered as an option: slowest-growing canopy → the rest of canopy and taller shrubs → other shrubs and bigger perennials → the rest.

Design for Areas 2-4:

Island beds 2 and 3 (down and right) have a formal layout with a repeating planting pattern. Colour scheme is compatible and some common plants create a sense of continuity.
Bed 4 (bottom right) has more informal planting which would allow extending it into nearby areas of poor lawn. The black spot marks the elm. Species choice is dictated by shade tolerance and low maintenance. Detailed plant lists with recommended cultivars, their height and spread accompany the design maps. Plant costs are (2) £520; (3) £210; (4) £350.







Design: Planting implementation plan and timescale; overall costs

I created an implementation plan listing jobs in the most logical order, and with the best time of year for them. Depending on the committee's priorities and budget, implementation could take from as little as 1.5 years to several years. Here is an extract from the plan (relevant design areas are numbered in brackets):

Decide on the implementation speed and priorities: choose what the Committee wants to implement in the first instance, and establish priorities for the rest (**Jan-Feb**). My advice would be to prioritise:

- Fruiting trees and shrubs as they will need a year or two to establish to start fruiting (1);
- Reviewing the regular maintenance routines with a view to improving the soil and plant health (12 and 14); and
- Some of the flower beds for high visual impact – especially those that can be planted without disturbing the other beds (e.g. 2).

Educate the maintenance team in basic plantsmanship to ensure the safety of new plantings (**Jan – May**) - **or hire another, competent team**. This is a *sine qua non* for the success of any additional work in the garden.

Order trees and shrubs for the forest garden (1) (all or some) (**Jan-Feb and onwards** if planting in stages). NB: some plants need ordering in advance if they are rare or in short supply (e.g. Goumi and some plum cultivars – reserve these now for next Dec-Feb despatch).

Order plants for ornamental beds (**Jan-Feb** onwards, for delivery later in spring), focusing on the chosen beds (2 to 11). Etc. etc.

Overall project costs were estimated at £3850.
This included plants but not labour, other than £300 for a shrub survey to assist the maintenance team with a more informed shrub care.

Client's response to design

I presented the design to the garden committee in late December, and it was accepted with the exception of the forest garden, which was deemed far too adventurous (and costly) for the time being.

The committee decided the 'Midden' site would be used for a wild flower meadow.

In March, the committee announced a tender for garden maintenance based on the plans set out in the design. I tendered for the job and won, with a maintenance quote that was slightly higher than some of the others, but the committee now seemed willing to prioritise (at least an expectation of) quality.

I started work in May 2018, and am still looking after the garden nearly 2.5 years on, with a team that has fluctuated in numbers between 1 (i.e. just myself) and 4.

Hence I can also talk about the rest of the design process: Implementation, Maintenance, Evaluation and Tweaking.

Implementation

This mainly followed the implementation plans set out in the Design, with the corrections for the time of year (we started work in May) and the changed plans for the Midden. Since 'maintenance' is part of the design and therefore also part of its implementation, it's hard to separate them neatly and they overlap in the following account.

Shrub survey in the proposed form became redundant since I took over looking after the garden; but a survey was conducted to identify overgrown old shrubs for removal, which had been done in Feb 2019. Some gaps have been planted with new shrubs and perennials, others allowed to fill in from neighbouring shrubs.

New bed planting was completed in under a year, with beds 2-6 finished by the June annual garden party. The less favourable time of year for planting meant that we had to water more than expected to help new plants establish. We still lost some (also owing to dog damage).

Lawn mowing was subcontracted to another company; and it soon transpired that their equipment did not permit mulching mowing (they also thought it led to excessively damp lawns and soggy bottoms of picnickers). So we composted the grass with weeds and woodchip, getting nice big hot compost piles. Compost was used as mulch on beds and borders, sifted onto lawn when sowing bare patches with clover etc., and used to propagate plants from seed and cuttings.

Maintenance

This again largely followed the plans set out in the Design.

Although we compost a lot, many weeds just get put in deep shade under shrubs and hedge trimmings, and shrub prunings are used for deep mulching in gaps between shrubs and in tree thickets.
Longer thicker branches are laid along the railings to provide structure to the edges and trap the finer mulch from sliding out of the garden. Once this decomposes, it can be planted up with groundcovers to trail over the edge. These mulches are topped with autumn leaves and woodchip for diversity and aesthetics, and compost to seed good soil flora.

Where the soil has recovered and is relatively weed-free, I continued planting up the gaps, using plants donated by members and those I propagated. Flower beds generally remain problem-free and low maintenance.

Shrub and tree areas require periodic re-visiting with a view to further rejuvenation, thinning out or filling in.

Paths became more of an issue as weeds regrow faster than we can return to the weeded patch, so these may require a tweak. Generally the committee have been very understanding about this, and some even joined in the weeding!

Evaluation

The design has achieved its goal of returning the soil and plants to a more healthy state. There aren't many areas left where you can see bare soil, with the exception of steep sides to some elevated borders. A variety of fungal fruiting bodies can be seen at different times of year (and not just saprophitic brackets and other stump decomposers): blewits, spring / poplar caps, ink-caps, suede boletes, morels, amethyst deceivers etc. The earthworms seem to be everywhere you look. People are seeing and hearing more songbirds. A native wild orchid (*Epipactis helleborine*) has been spotted in 3 locations – 2 in clearings among shrubs and 1 in the Birdbath bed.

A few shrubs that looked like they were not thriving 2 years ago seem to faring better. There are still woolly aphids on some evergreens, which suggests plants are under stress, but then we have had a phenomenally dry spring (April-May) and a very wet August.

Most members accepted our practice of deep mulching the shrubbery (with only one complaining that it's an eyesore and a far cry from the neat clean soil in the Botanic gardens!).

New planting took a couple of years to establish and now looks great, although there is room for more plants in places to bridge the gaps in flowering seasons and where plants have not expanded to their predicted spread. Additions are generally noticed and appreciated.

Tweaking

Removal of a young elm in NE bed in summer 2019 (on suspicion of Dutch elm disease) required a rethinking of the planting, since the bed has lost its focal point. Other flower beds have been added and improved where there were suitable gaps.

In spring 2020, when the mowing contractors were furloughed, we mowed ourselves using a large push mower (it takes about 5 hours to mow all of the garden). Although the results were not as neat, they seemed acceptable so we kept the practice of interchanging manual and booked tractor mows to keep mowing costs down and allow more hours for gardeners at this difficult financial time for many.

The committee is receptive to the idea of capturing rain from the pavilion roof, which would also allow for creating a self-watering propagation area behind the pavilion.

Path weeding is becoming tedious so I am researching flame and heat-weeders as an alternative, so that we can break the cycle of weed regeneration.

Wild flower meadow sowed by the committee is on very fertile soil (former compost site!) and the more robust species are outcompeting the more delicate / interesting ones. I proposed tweaking the species choice to include tall wild flowers (like greater bellflower) and establish another, shorter sward meadow on a site with poorer soil.

Reflections on the design process

SADIMET worked well for this design, since I had been given a brief by the client. (The lack of space for the brief is often raised in criticism of this design framework).

For me, the Analysis section (which I often struggle to separate from both Survey and Design) in this instance worked as a diagnosis to the problem the client called me in to resolve (poor soil).

At times it was tricky to understand whether there was a distinction between Maintenance as part of the design process and the Maintenance as subject of the design itself... (If there is, you get Maintenance of Maintenance!)

Creating the design took about 3 times longer than originally estimated (over 30 hours in total). Apart from the pressure of producing a design for someone else to implement, there was also an element of wanting to convince the various committee members that Permaculture was the right approach.

The design would have benefitted from more time spent on the Survey (especially in different seasons).

Being hired to look after a garden this size on the back of the design was a huge boost of confidence (and also possibly the biggest organisational challenge since motherhood...). It allowed me to improve my horticultural skills, management and people skills, and become more organised in daily life. Seeing the design implemented, and the garden become lusher and healthier and enjoyed by people is also very rewarding.

Birdbath bed before (top left), after design and planting (top right), and a year later (bottom right).
Bottom left: *Epipactis helleborine* (here in seed) that appeared in the bed in summer 2020.

Pavilion bed before (top left), and after design and implementation (summer 2018, top right; summer 2019, bottom right; and late summer 2020, bottom left)

Bed 4 after (re) design & tweaking (right);

View of beds 4 & 5 in 2020 (bottom)

Beds 4 (top) and 5 (bottom) before design

Beds 7+8 (above) and 9 (below), before (felt) and after design and implementation (right)

Soil before (top left) and after application of organic mulches (far right); mycelium on woodchip (middle); mulch on beds and along the external perimeter (bottom left and middle)