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The Mother's Heart Garden

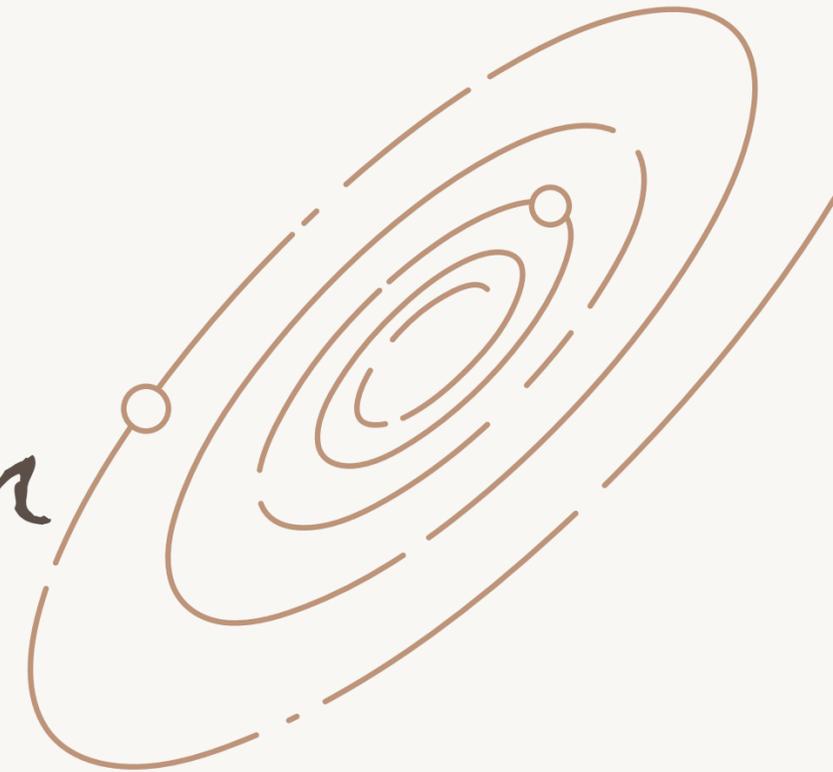
2021

Joanna Bojczewska

Permaculture
Design Certificate



Journey through the Design



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Part 1: Design Context

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Part 1:

Design Context

THE MOTHER'S HEART GARDEN

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Joanna Bojczewska

www.ekopoletko.wordpress.com

Over the years, I have co-authored and taught agroecology & permaculture courses, and grown organic vegetables and seeds on a market garden scale.

In teaching edible gardening and facilitating learning about plants, soil life, water cycles, I see both personal growth and collective transformation practice that gives us first-hand experience of our interdependence with all the living world.

Through contact with the land and plants in the garden, we re-sensitise the senses, growing ecological awareness as well as deepening our sense of intimacy with nature and ourselves. Gardening is a direct way to become practical agents of the ecological transition to regenerative cultures of tomorrow.

My academic background is in Social Anthropology and Ecology. Since leaving Poland as a teenager, I have lived and learned about sustainable land practices in India, Ethiopia, the USA, the UK, and Spain.



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1. About designer:

Joanna Bojczewska



03



Gardener

seeds / food growing

Trained at Organic Lea Wokers' Coop in East London, run her own 4 acres market garden near Krakow, PL 3 yrs. Finished 2-year organic farming course. Travelling educator. ekopoletko.wordpress.com



Educator

agro-perma-lab

Founder and co-director at training & research Foundation - Agro-Perma-Lab (APLab), with the mission to grow permaculture education and educators' network in Poland. www.agropermalab.org



Designer

film / research

Research:
Δ APLab Synergies of Agroecology & Permaculture
Δ APLab Seed-savers & their Seed Homes
Design: Kitchen Garden & Agroecology Workshop at Cohabitat Foundation



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1.1 Permaculture portfolio to date

Food-growing 2012-2018

Garden & education design 2015-2021



OrganicLea 2 yrs
apprentce & certificate

Level 2 Organic Fruit & Veg Horticulture
Certif. 1 year Apprenticeship in Social
Inclusion Gardening at a workers' coop



Cohabitat Foundation 1yr
Main grower / Agroecology trainer

Designed expanded kitchen garden &
plant propagation system for a series at
land-skills farm-lab in Central Poland



Agro-Perma-Lab 3 yrs
Founder / Trainer / Researcher

Trainings in social permaculture,
agroecology, seeds etc. for
educators and community leaders
in Poland



Ekopoletko 3 yrs
Main grower market garden

Micro-scale biodiverse market
garden near Krakow, growing for
urban coop & farmers' market.



Permakultura.edu 1 yr
Co-author / trainer

Developing intro to permaculture
workshops and teaching tools on
farms, with accent on food-growing



**International Permaculture
Educators' Forum**

Co-organiser & curator

International gathering developing
educators' competencies, networks and
imagination in Warsaw 2021.



1.2 Client brief:
Retired urban
recreational
gardener



Urban small

self-nourishing

The client is a pensioner/professional, who will use the garden 2-3x/week in high season & can do light intuitive care-work, but no hard/bending work. Design must include plan for paid helpers and optimised choice & volume of crops.



Leisurely guest

self-regulating

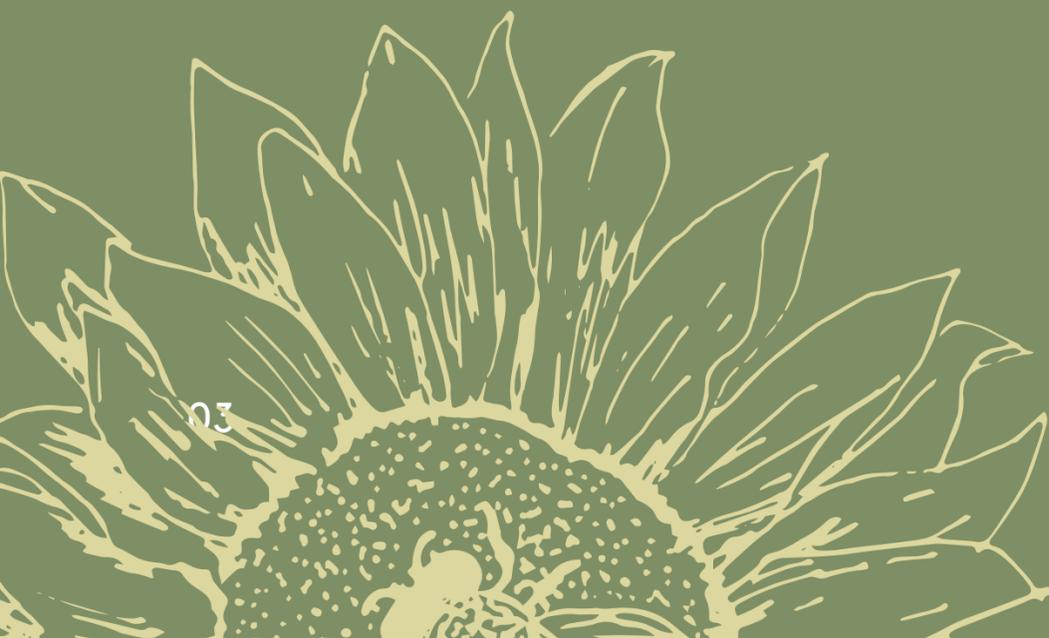
Garden's function is primarily recreational. The food forest & wildlife-encouraging species with few beds for non-demanding herbs and veggies will provide manageable edible yield. Small batches of harvest can be preserved & dried.



Biodiversity

self-seeding paradise

Elements enhancing biodiversity will be integrated into the leisure-aspects, such as lawns, edges and meadow patches. Since the allotment is too big for the client, a quarter of allotment will be dedicated to wildlife and medicinal species.





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1.2 "Bountiful park-like garden"

"My vision of the garden transformation includes a substantial work investment at the beginning, especially in perennial plants, followed by moderate to minimal regular work, due to my decreasing bodily strength.

I would like to plan for an effective strategy to deal with pathway weeds and an automated watering system for permanent beds. I want to spend my time as much as possible on recreation in an ambient colourful flower garden, with a country feel.

I imagine the allotment looking a little like a park overgrown on edges and shielded from view with a natural bountiful hedge of plants, a little like a "secret garden". With plenty of relaxation, ideally, at a proportion 1:4 (work to leisure), I'd like to see colourful flowers all year round from spring through summer and fall"

Client: Retired medical doctor



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Relative location

1.3 Priority Goal #1: Energy-efficiency

The client's age requires that as much as possible the biomass-production cycles are based on 'chop&drop' principle. After after initial investment, the need for infrastructural and plant work should be minimised.

Specific energy-efficiency targets:

- efficient & automated water harvest system
- cutting work on weeding and plant care
- recycling nutrients for fertility to minimise carriage with 'simple' composting system
- food forest plants - moderate yield & height
- maintenance plan for the edible garden
- decreasing costs and enhancing recycling



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1.3 Priority Goal #2: Regeneration & rest

The client wishes to retain the lawn area, whilst increasing the sense of privacy and enclosure.

Specific regeneration & rest targets:

- increased areas of lawn and permanent flower beds
- "green" adaptation and upcycling of existing infrastructures, for example old hut, into toolshed
- creation of birds- and insect-friendly places
- regeneration of soils and weed-protection with mulch
- place to wash hands, have a bio-break (toilet)
- improved temperature regulation of allotment cabin
- appropriate security/safety measures for the garden



Pollinator edges



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1.3 Priority Goal #3: Biodiversity & beauty

Client's desired style of the garden will combine elements of rural and "secret" gardens. Particular emphasis is on flowering perennial bushes with limited introduction of new trees. The client is happy to learn natural ways of pest and disease management in plants.

Specific biodiversity & beauty targets:

- create biodiverse nitrogen-fixing lawns & meadows
- herbal spiral, curved edges and flowering multi-function hedge-rows
- front-side garden designed for beauty and engagement with neighbours
- emphasis on colour and aroma in the choice of plants

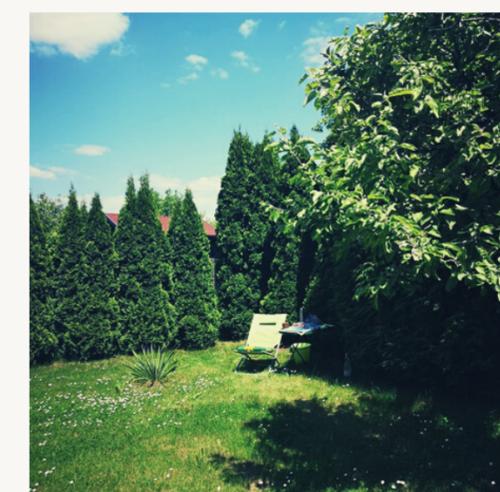
Social-ecological pact



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1.4 Site description: Allotment no 18



Location

Allotment no 18
City Allotments (ROD),
Opole, Poland

Latitude: 50°40'N
Longitude: 17°56'E
Altitude: 172.2m
Distance from the sea: 457km N
Distance from parking/road: 275m
Distance from home: 2.7km
Time to get here: 35min walk / 13min bike
Length: 29m / Width: 15m
Area: 435m²
Soil: loamy-sands, semi-fertile

Allotment

An urban family garden in
Southern Poland

Allotment no 18 is one of the largest of 700 plots, amounting to 430m² of urban land. Knee-high side fences open the view into neighbouring plots, whilst west-facing hut & lawn areas get the sunset light. The garden belonged to one family over 50 years until its purchase in 2019. Previous owners applied chemical products on site.

Food forest

Mature range of fruiting
trees, bushes & climbers

Standard & semi-dwarf varieties of apples, cherries & plums yield across season supplemented by gooseberry, currants, vine, blueberries & raspberries, with newly added mulberries and herbs. Backyard fence and pergola overgrew by wild rose & ivy. Existing variety of undergrowth flowers and some herbs, strawberry & rhubarb.

Recreation

Structures & spots for rest
and relaxation

The allotment has two building structures: a fully enclosed wooden hut & an open-air pergola. Two concrete water tanks can hold up to 3m³ of water, adding to micro-climate. L-enclosed lush lawn by thujas provides perfect hide-away for gatherings and rest and provide opportunities for range of recreational activities.

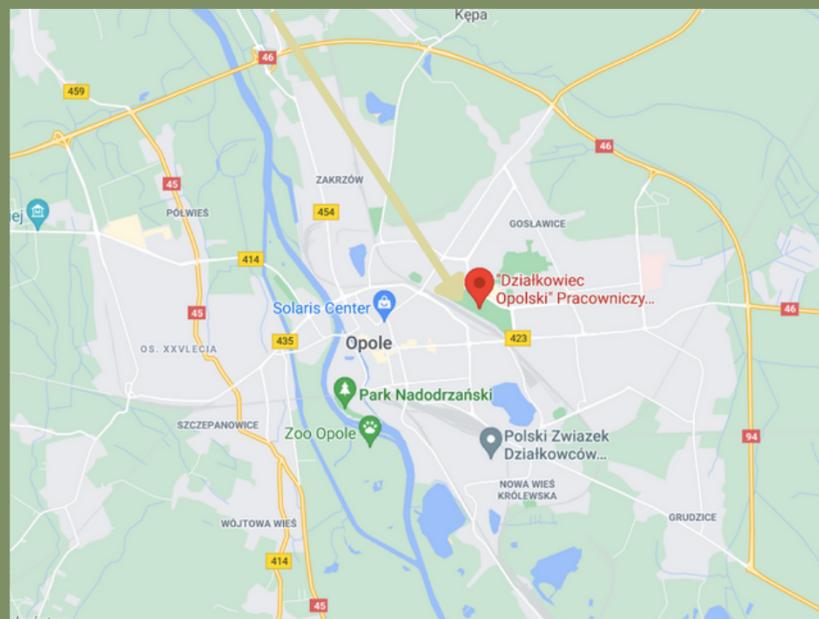
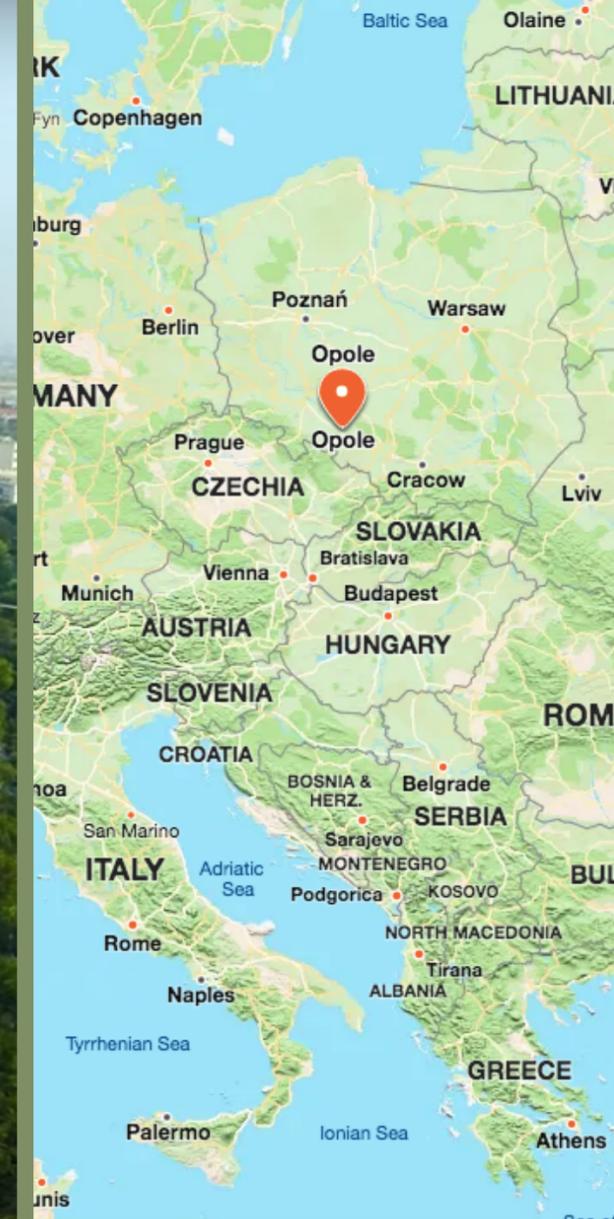
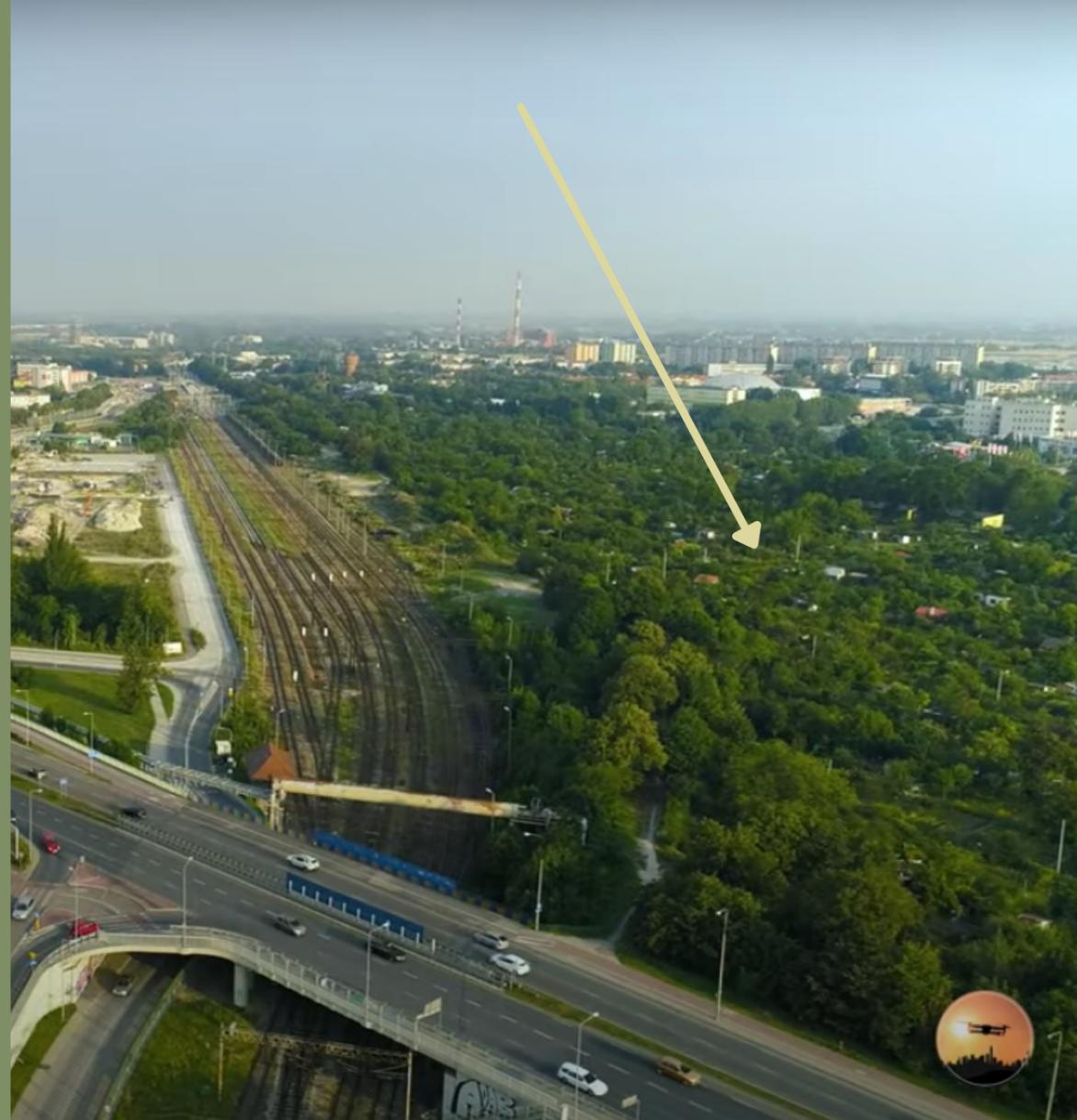


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1.4 Location

Maps & aerial view:

the garden is situated within the largest nature area in the centre of Opole town, amounting to 252 359m² (25 hectares) and over 700 allotment plots. The city of Opole is in Polish lawlands and is a population of 200,000 people.





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1.4 Site description: Opportunities

Climate

Warm temperate climate with regular rainfall

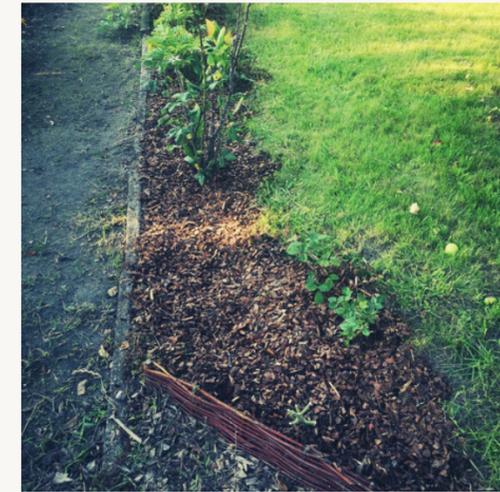
Average annual temp: 9.8 °C
Average rainfall: 736 mm
Rain-heavy months: May-July
Diest month: February
Warmest months: June-August
Extreme Temp: August 32°C
Aver. rain days/month: 8
Annual temp. range: 21°C
Aver.daily sunhours in summer: 10
Dominant winds: W & WNW
Dominant wind speed: 12-28km/h
no of storms/yr: 63



Resources

Allotment renaissance

Since Covid-19, allotments and permaculture movement in Poland have gained a particular momentum, creating a lively and vibrant atmosphere around intergenerational knowledge-sharing. The client has sufficient finances to make preliminary adaptation investment in good automatised systems, such as improvement on existing water harvest system and diversification of mature food forest. Neighbourly relations are conducive to learning.



Limitations

Appropriate 'abundance'

The key creative limitation (and design opportunity) stems from client's health condition, which determines that the garden is to be planned for light-work and moderate fruit yield. Excess yield leads to waste, which creates extra work; a good seasonal planner may enable its reduction via crop-sharing. Access to the allotment is on pre-defined days and requires special arrangements. Garden area is also relatively large for one.



Advantages

Old knowledge for new times

The client spent most of the early adult life on a working farm and has a good pragmatic approach to gardening as well as substantial knowledge gained through an allotment-keeping course 30 yrs ago. Good networking skills & internet research fill out any knowledge gaps. The client knows kitchen-scale fruit preserving techniques. Enthusiasm for learning about natural ways of plant care & land regeneration.



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1.4 Remarkable features

Natural treasures of Allotment no 18:

- Large area & mature fruit trees
- Access to water & water tanks
- Two existing roofed structures
- Lack of concrete or permanent land cover
- South-Western exposure much of the day



1.4 Challenging features

First-glance issues at Allotment no 18:

- unfriendly metal net fence from the front
- inaccessible far-away compost heap
- lawn maintenance needs & fuel footprint
- asbestos fencing with one neighbour
- North-facing redundant veranda





1.5 Design vision & Impact



Impact 1

DESIGNING A REPLICABLE MODEL for urban MICRO-SCALE PART-TIME gardeners, their garden design process and place.

Impact 2

UNLOCKING THE POTENTIAL OF PERMACULTURE IN ALLOTMENTS by demonstrating a case design for edible urban forest & biodiversity micro-site in Poland.

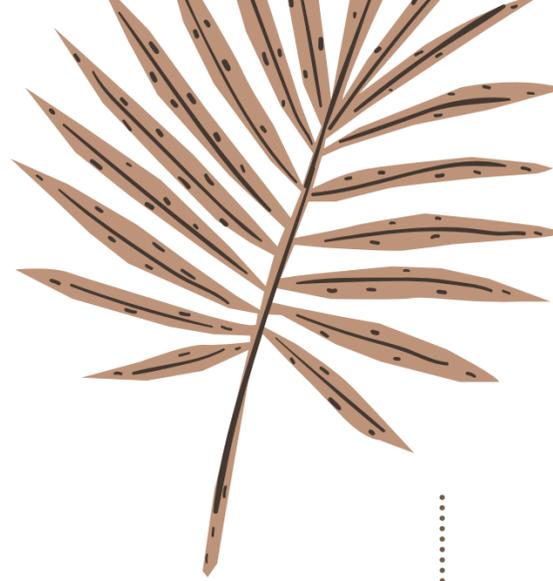
Impact 3

APPLYING OPEN SOURCE APPROACH to 'self-seeded' permaculture education by integrating PDC design project into designer's educational toolbox.



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1.6 Organising
metaphor:

The Mother's Heart

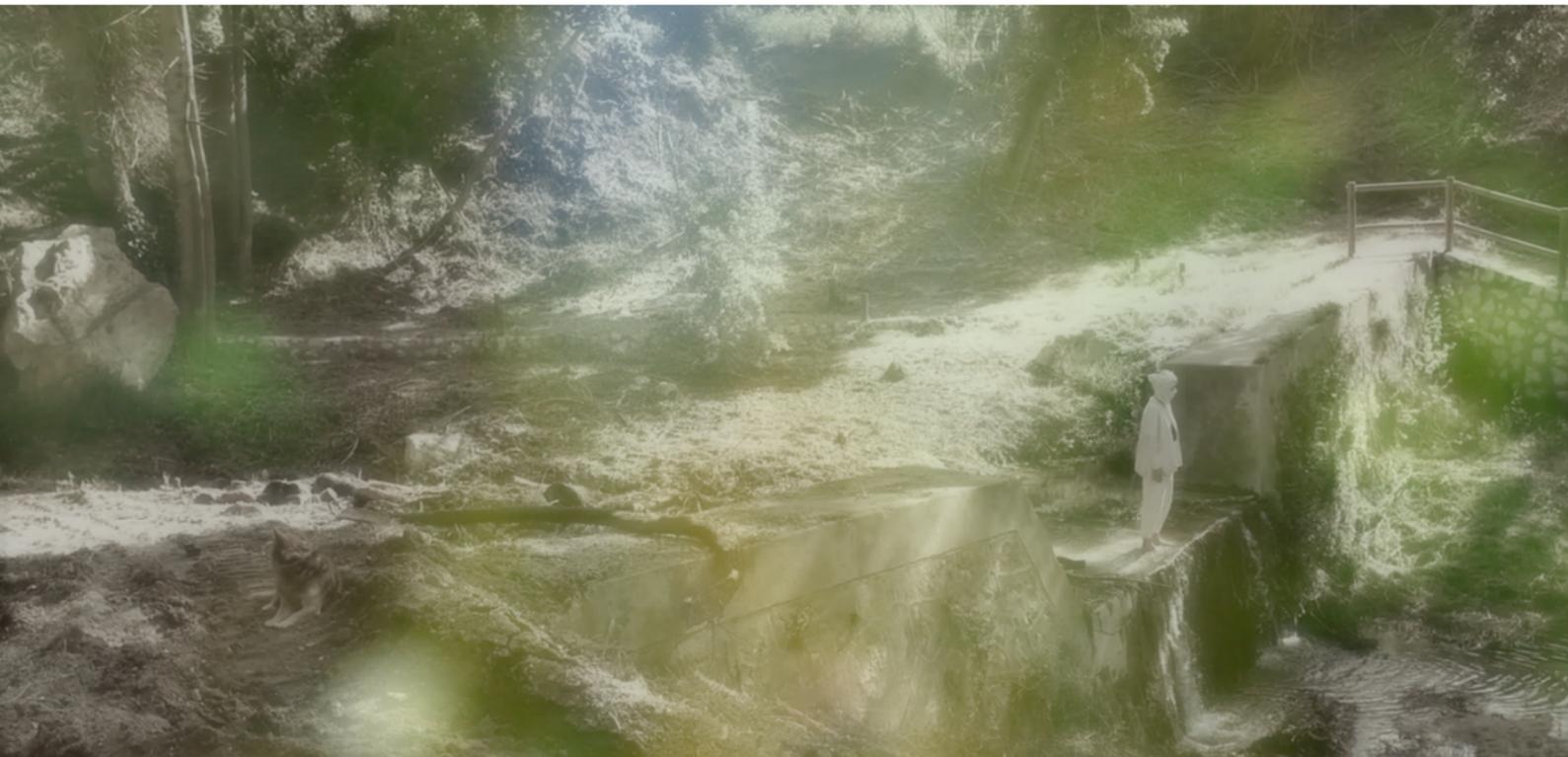
Where is the Heart of Mother Earth?

The Mother's Heart is chosen as the organising metaphor of this project. It is a personal garden, a microcosm of four planetary engines of life: Biological, Solar, Hydrological, Social-Reflective.

Garden is the *heart-space* of many urban families in modern edible cities. An allotment plot; a space that regenerates mother-daughter-grandmother bonds and links generations. It is the urban micro-farm- a rich biodiversity refuge. It is a food-giving paradise.

Mother Earth is under unprecedented pressures from climate change, to environmental degradation, soil and water pollution as well as species extinctions.

Collectively, connecting to Mother Earth through small gardens and tiny habits, we can begin to renew our pact of trust with Mother Earth, and rekindle in our hearts the reverence for nature.





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Part 2: Maps & Analysis

- 2.1 Base map
- 2.2 Vegetation map
- 2.3 Species list
- 2.4 Zones
- 2.5 Sectors & climate

Part 2:

Maps

THE MOTHER'S HEART GARDEN

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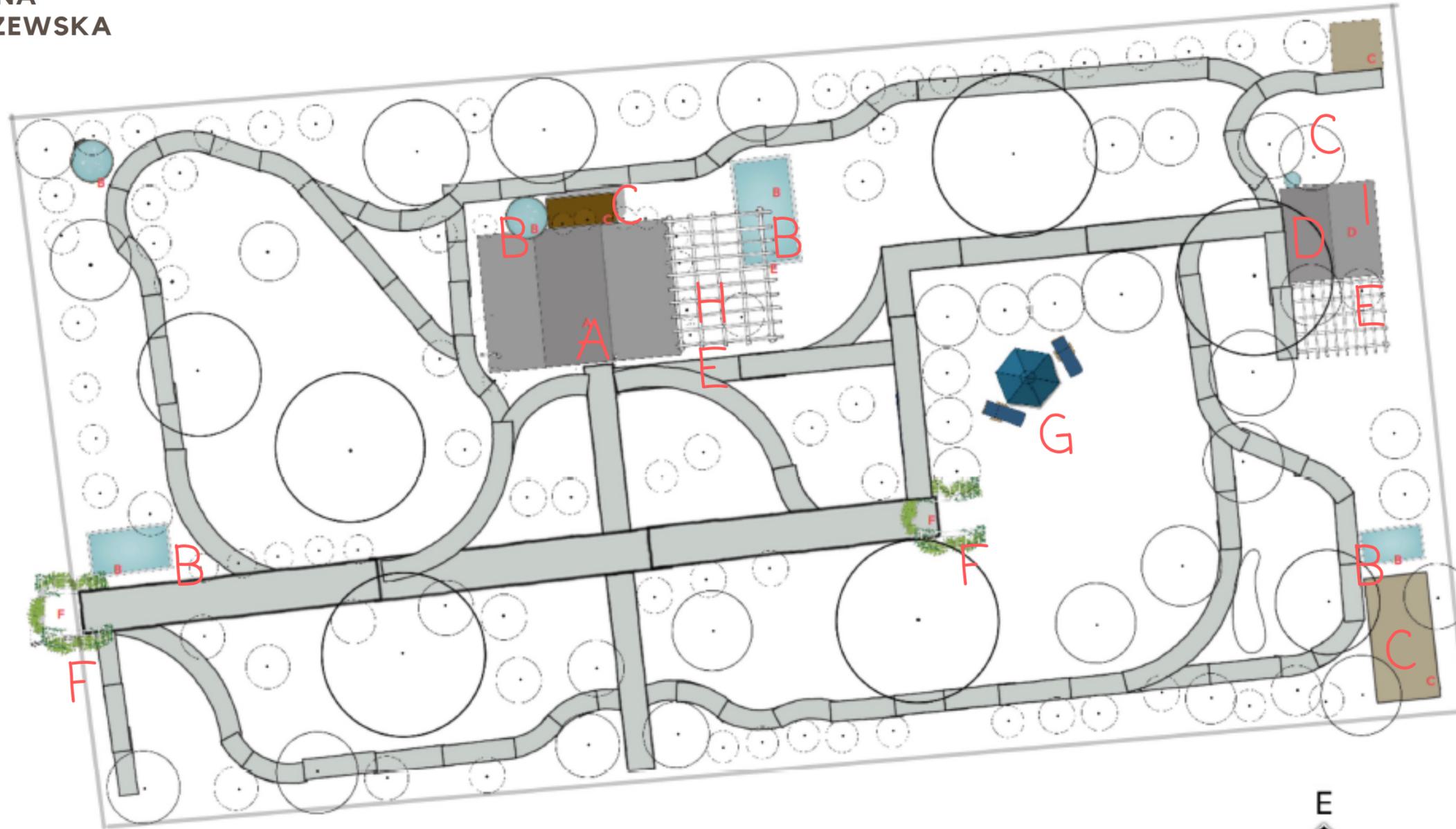
Part 2:

2.1 Base map

THE MOTHER'S HEART GARDEN

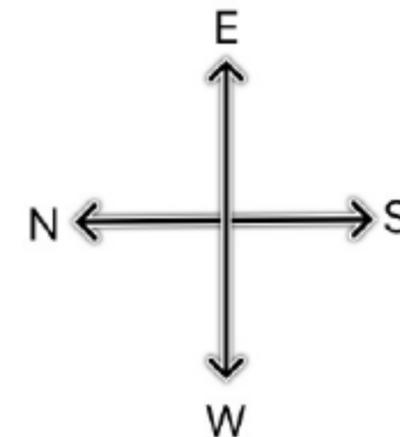
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Permanent features on site



EXISTING STRUCTURES

- A. ALLOTMENT HUT
- B. WATER TANK
- C. COMPOST BIN
- D. TOOLSHED (SEMI-CLOSED)
- E. PERGOLA / GLASSHOUSE
- F. PERGOLA WALKWAY
- G. SUN UMBRELLA & CHAIRS
- H. SOLAR DRYER
- I. CROP CELLAR

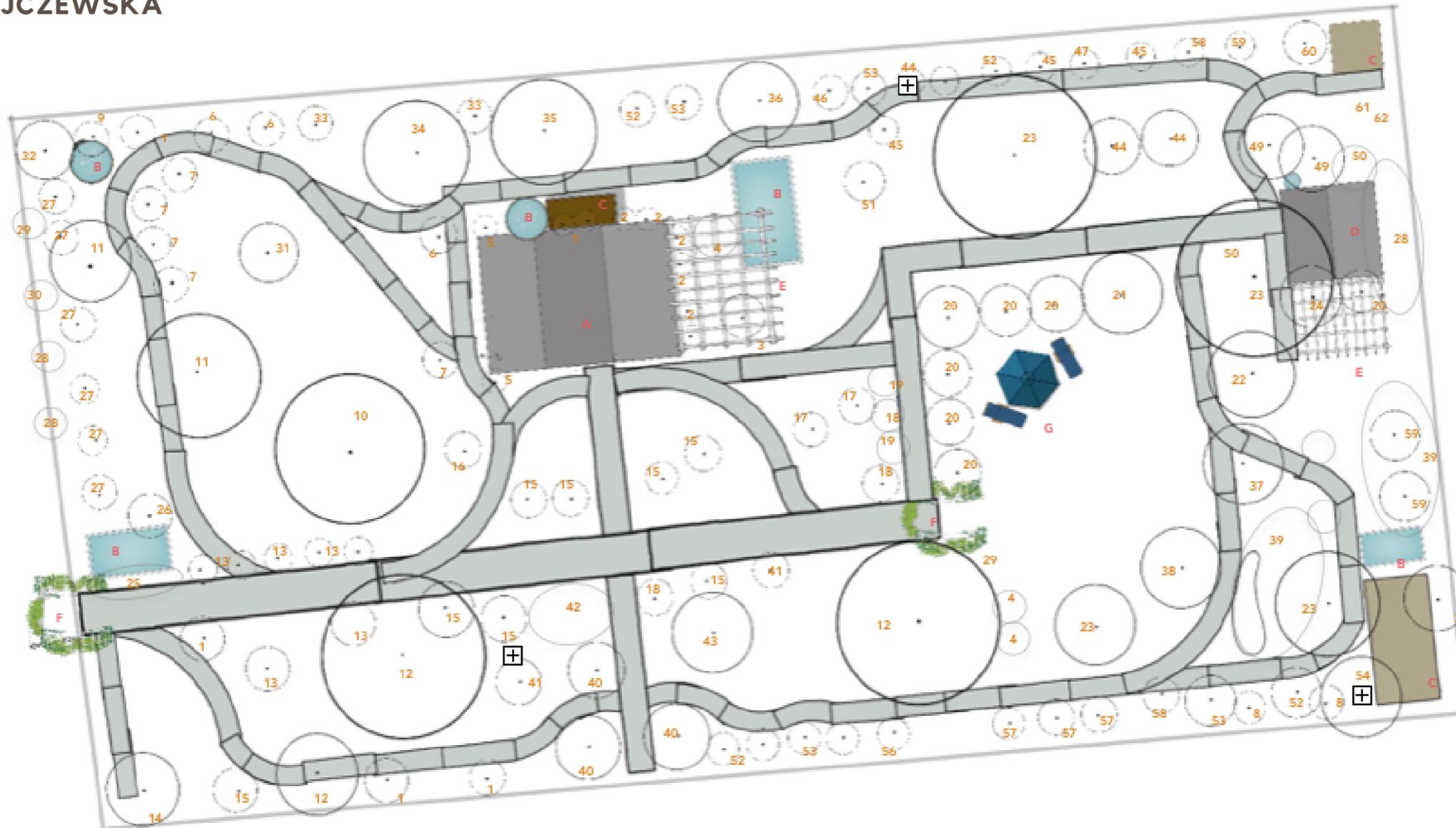


5m

2.1 Basemap

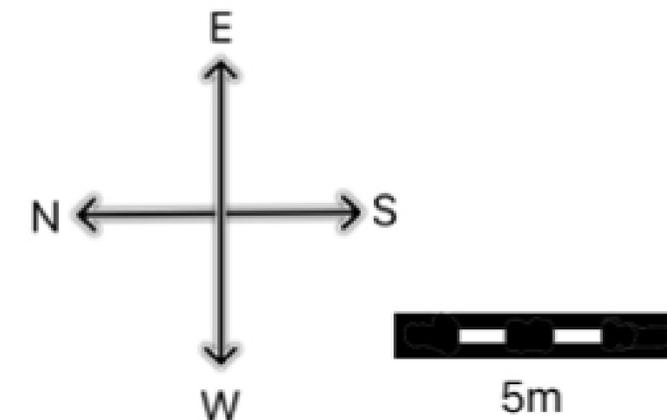


EXISTING VEGETATION



EXISTING VEGETATION

- A. ZONE 0: no 1-2
- B. ZONE 1: no 3-9
- C. ZONE 2: no 10-24
- D. ZONE 3: 25-43
- E. ZONE 4: 44-62



2.2 Vegetation

2.3 Species list - vegetation

ZONE 0

ALLOTMENT HUT- OUTSIDE



- 1 Kiwi "dr Dzymanowski", *Aktimidia kolomikta*
- 1 Kiwi "Adam", *Aktimidia kolomikta*
- 2 Black Grape Vine "Leon Millot", *Vitis vinifera*

ZONE 1

FLOWER BEDS & PERGOLA



- 3 Red gooseberry, *Ribes uva-crispa*
- 4 Yucca, *Yucca L.*
- 5 Giant Miscanthus, *Miscanthus giganteus*
- 6 Chokeberry, *Aronia arbutifolia*
- 7 American Blueberry, *Vaccinium corymbosum*
- 8 Strawberries, *Fragaria L.*
- 9 Willow "Sachalińska", *Salix L.*

ZONE 2

RELAXATION SPOTS



- 10 Apple (semi-dwarf) "Koksa", *Malus domestica*
- 11 Cherries (medium-sweet, sour-sweet), *Prunus cerasus*
- 12 Cherries (medium-sweet, sour-sweet, "Szkłanka"), *Prunus cerasus*
- 13 Hortensia, *Hydrangea peniculata*
- 14 Magnolia, *Rustica rubra*
- 15 Rhododendron (Azalea), *Azalea csardas*
- 16 Cytisus "Lena", *Cytisus scoparius Lena*
- 17 Rock heather "Little Heath", *Piers japonica*
- 18 Rhubarb, *Rheum rhabarbarum*
- 19 Woodland strawberry, *Fragaria vesca L.*
- 20 Thuja 'Smaragd', *Thuja occidentalis*
- 21 Thuja, *Thuja plicata*
- 22 Apple (semi-dwarf), "Papierówka", *Malus domestica*
- 23 Plum (Italian early; Polish "Węgierka", *Prunus domestica*

- 24 Thuja, *Thuja plicata*
- 10 Buddleja, the butterfly bush "Black Night", *Buddleia*

ZONE 3

FOOD FORESTS ZONES



- 25 Horestail, *Equisetum hyemale 'Robusta'*
- 26 Caragana, *Caragana arborescens Lam.*
- 27 Hibiscus, *Hibiscus syriacus*
- 28 Virginia Creeper, *Parthenocissus quinquefolia*
- 29 Clematis, *Clematis L.*
- 30 Japanese rose, *Rosa rugosa*
- 31 White Mulberry, *Morus alba*
- 32 Corkscrew willow, *Salix babiyonica*
- 33 Blue honeysuckle, *Lonicera caerulea L.*
- 34 Winter apple, *Malus domestica*
- 35 Autumn apple, *Malus domestica*
- 36 Hazeulnu, *Corylus "Syrena"*
- 37 Chestnut, *Castanea sativa*
- 38 Walnut, *Jugulars regia*
- 39 Autumn raspberry, *Rubus ideas*

- 4 Yucca, *Yucca L.*
- 23 Plum, *Prunus domestica*
- 40 Common lilac, *Syringa vulgarise*
- 15 Rhododendron (Azalea), *Azalea csardas*
- 41 Weeping bottlebrush, *Callistemon viminalis*
- 18 Rhubarb, *Rheum rhabarbarum*
- 42 Lilly of the Valley, *Convallaria majalis L.*
- 23 Plum early; Polish "Węgierka", *Prunus domestica*
- 43 Peach, *Prunus persica*

ZONE 4

WILDLIFE ZONES



- 44 Apple (semi-dwarf) "Polna Jesień", *Malus domestica*
- 45 Forsythia x intermedia "Lynwood",
- 46 Cornelian cherry, *Cornus L.*
- 47 Goulder rose, *Viburnum opulus*
- 23 Plum early; Polish "Węgierka", *Prunus domestica*
- 48 Dog rose, *Rosa canina L.*
- 49 Winter creeper, *Euonymus fortunei 'Emerald Gold'*

- 50 Ivy, *Hedera*
- 51 European boxwood, *Buxus sempervirens*
- 52 Red currant, *Ribens rubrum*
- 53 Black currant, *Ribens nigrum*
- 54 Maple, *Acer pseudoplatanus*
- 55 Apricot, *Prunus Armeniaca Scop.*
- 56 Green gooseberry, *Ribes uva-crispa*
- 7 American Blueberry *Vaccinium corymbosum*
- 57 Thornless blackberry, *Rubus fruticosus*
- 58 Honey Locust, *Gletlitsia triacanthos*
- 59 Tamariske, *Tamarix parviflora*
- 60 Artichokes, Jerusalem *Helianthus tuberosus*
- 41 Common lilac, *Syringa vulgarise*
- 61 Canada goldenrod, *Solidago canadensis*
- 62 Greater calendine, *Chelidonium majus L.*



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Part 2:

2.4 Zones

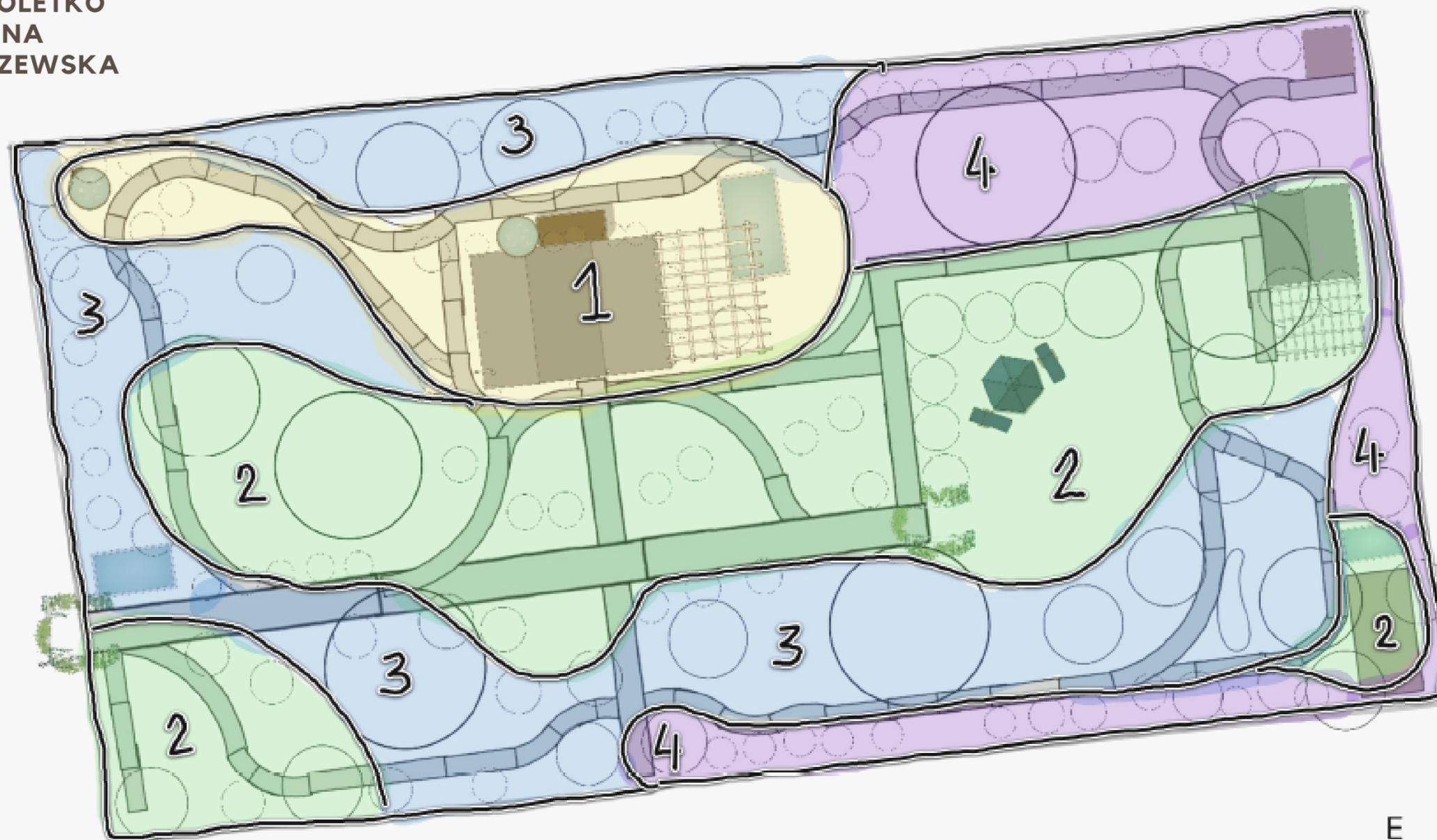
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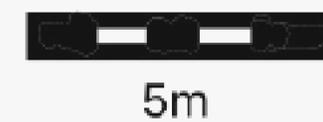
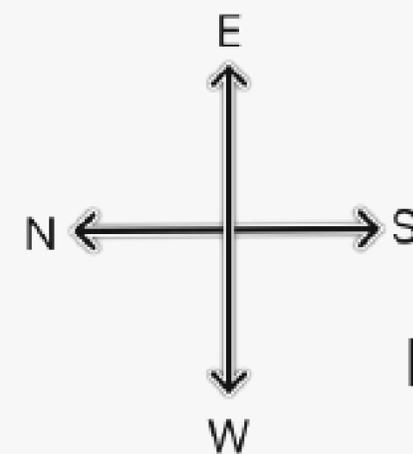


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2.4 zones





2.4 Zones

ZONE 0

ALLOTMENT HUT- INSIDE



The allotment hut is in the central location of the site with interior dimensions 2.3x3m, with a 2,3x1m terrace & structure of light wood. Currently, its main function is rest & storage. However, as the hut's heat fluctuates in extremes, the main challenge is to use these changes smart. A herbal drying net column will be hung from the ceiling. The terrace will be built over with a large glass window (N-facing) and the corner equipped with a rocket-type mini fire-stove fueled by prunings. The roof will be green-adapted for insulation whilst sides are overgrown with a vine for sun protection and fruit.

ZONE 1

FLOWER BEDS & PERGOLA



Around the hut and along the central junction of alleys extends Zone 1. Here we have main annual, medicine & culinary plants, requiring regular picking or water-checks. Herbal spiral ending with a rain harvesting pond sits North of the hut, which is used with pergola as vertical support for grapevines, mini-kiwis & passion fruit. From the middle alley, the client can access a standing-high keyhole bed (with kitchen-scrap deposit & cut&come-again salads). East beds in front comprise a mix of perennial&annual flowers for beauty. There is a handy compost bin & water barrel behind the hut for easy clean up on the way home.

ZONE 2

RELAXATION SPOTS



Zone 2 is designed with the view to provide relaxation & open-space lawn areas. The lawn grass is to be, however, intersown with clovers and short-flowers, whilst edges of the adjacent Food Forest will be buffered with a stripe of pollinator meadow varieties left uncut to self-seed. The area SW of the hut will include a hammock, whilst the Eastern stretch enclosed by the 'L' row of thuias is designed as a playground for grandchildren. The far-E roofed semi-open hut (2x2m) turned toolshed will be extended with a pergola, overgrown by edible & flowering perennial climbers, such as passion vine, jasmine & hops. The area of ES exposure will include a solar-food drier.

ZONE 3

FOOD FORESTS ZONES



E-W stretches of land along the fence, are designed as park-like food-forest, where one can stroll meditatively around the site. The mature trees and few add-ons constitute the base for plant guilds, approximately half of which will fruit human edibles, & half provide wildlife feed and autumn colour. Paths are marked with willow panels, & woodchip; willow pergola walkways evoke the 'secret garden' feeling. Plants selected with priority for weist-high picking, scents & non-pruning. In the outer NE corner, the water-tap connects a drip watering system; SW corner has the main composter in the shade of maple & walnut, feeding summer squashes.

ZONE 4

WILDLIFE ZONES



The Wildlife zone extends in a U-shape at the back of the garden, where it meets with three other allotments. These areas are left as biodiversity refuge, with tall plums shading heavily hide-away trees & shrub habitats among additionally planted hedges & guilds of hawthorn, elderberry, lime tree, hazel, chestnut, wild rose, Siberian pea shrub, etc. Bird huts and bug hotels will be mounted & mushroom-yielding woodpiles left as a refuge for hedge-hocks, with undergrowth of comfrey, nettles, & other shade-lovers. Additional vertical wooden panels may be inserted in spots along the fence, as privacy will be appreciated to be overgrown with ivy, blackberry, hops.



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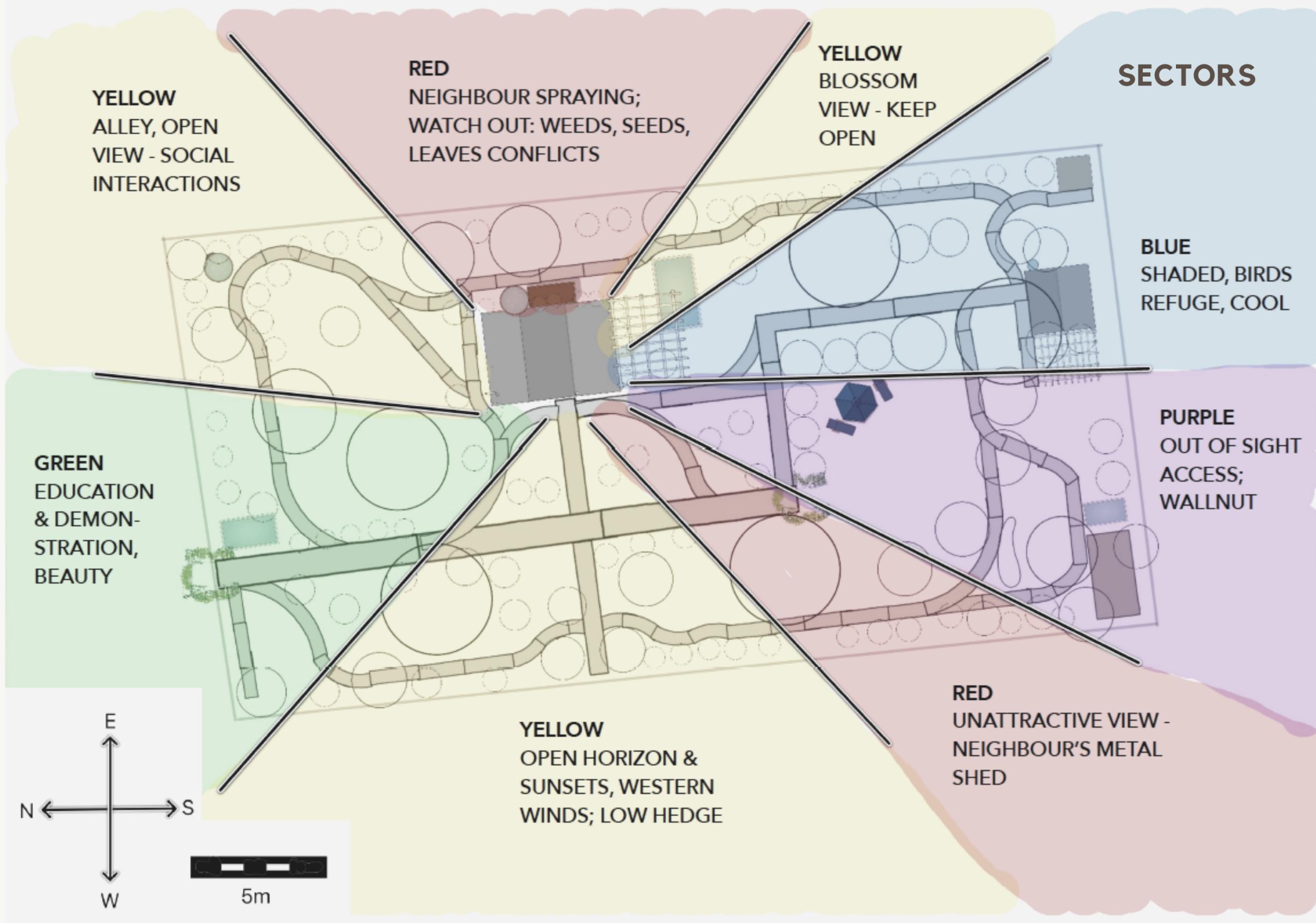
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2.5 Sectors

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2.5 sectors

YELLOW - POSITIVE SECTORS (enhance, encourage)

NE: open view allows sight of who is coming, who is passing by. From the allotment hut's (future) winter-window, this may be also a bird-watching spot for socialising.

E: The view from the Southern side of the hut's corner opens up onto the neighbour's cherry orchard; as fence is only knee-high this visual effect of an extended open space is worth keeping open.

W: Sunsets piercing through a far-located single spruce-tree towering over neighbour's allotment is an attractive spectacle. This side also opens onto rarely used adjacent apple orchard, hence fence should remain low to retain the visual sense of spaciousness and depth.



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2.5 sectors

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RED - RISK SECTORS (avoid, minimize)

E: the neighbour's chemical herbicide spraying create a hazard of diminishing hedgerow wildlife and infecting food forest fruit. This can be diminished by placing & overgrowing with ivy wooden panels at the stretch of 3-5m of most impact. In additional the panels may prevent some of the leaf-fall from food-forest, which falls over short fence to the dislike of the next-door gardener.

SW: The main negative factor is an unappealing view onto shaded, bare area underneath a massive walnut tree, overcasting a metal shed from corrugated iron. Wooden 2m tall panels will be mounted at the relevant 2-4m section as part of the food-forest walkabout.

GREEN - SOCIAL/REFLEXIVE (educational & connection functions).

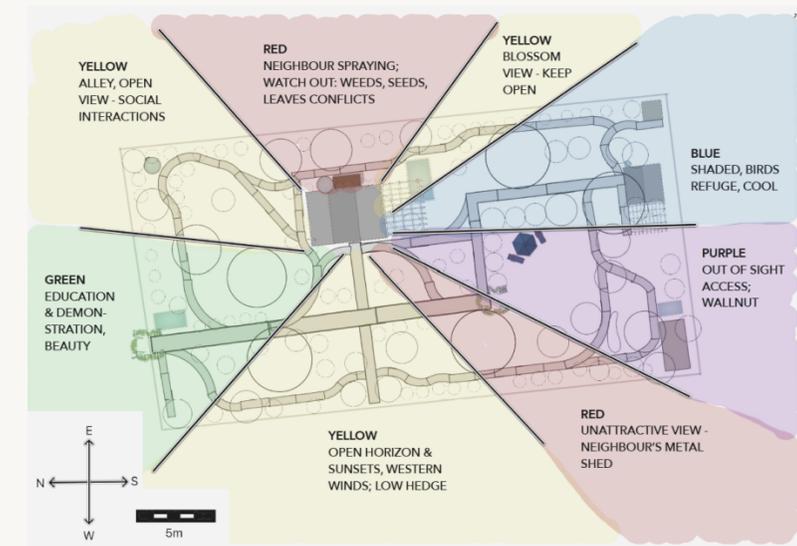
NW: the corner view right by the entrance exposes flower rainbow beds & the hut, with several replicable & already appreciated garden ideas, which spark conversations, connection and education about permaculture. A vertical 'corner' compost-deposit tube may be provided for elderly gardeners from the alley to cut their carrying distance & receive Great Matter.

BLUE - PROTECTION SECTOR (tend to 'passively', alert others)

SE: the wildlife zone 4, will be generally rarely visited except for seasonal check of woldlife habitats.

PURPLE - SAFETY (consider deterrent & warning measures).

SW: the area is largely shielded from view from the gardenfront and constitutes single location vulnerable to breaking-in. The fence on the West is jumpable, whilst the tall thuya 'L' enclosure obstructs the view of the Toolshed from the main alley. Toolshed should be additionally secured and valuables stores in metal locked trunks.





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Part 3: Analysis

- 3.1 *4 Hearts*: engines of life
- 3.2 Biological Heart
- 3.3 Hydrological Heart
- 3.4 Solar (energy) Heart
- 3.5 Social Heart

Part 3:

Analysis

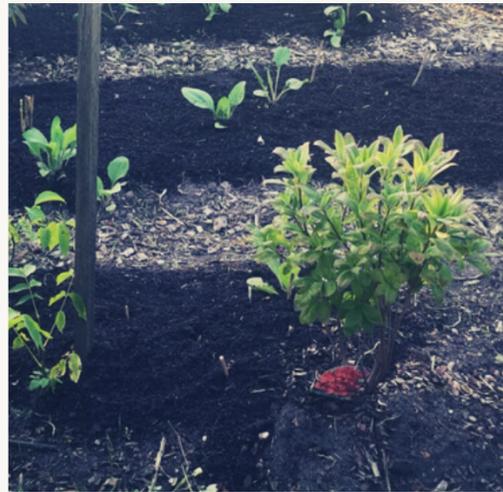
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BIOLOGICAL

biomass / compost

The main goal of permaculture design is to support primary base level of all biological reproduction of life, which is the creation of vibrant microbiotic soils. Composting, soil protection through cover-crops, non-dig, mulched pathways & effective microorganism will be applied. Neighbours can also join: *drop-and-go* their compost at the entrance collecting deposits.



HYDROLOGICAL

rain harvest / passive

Building on mulched, drought-resilient & well-structured soils, water will be primarily accumulated and stored in the ground & in biomass of plants. However, existing tanks, barrels & rainharvest surfaces will be adapted. 2 tanks, pond & water bowls give cooling & microclimate effect. Automatic drip watering system will be installed for client's convenience & water-saving.



SOLAR & ENERGY

season extension

Building on existing orchard, the growth of food-forest, vertical garden elements & wildlife refuge will enhance the web of interdependence & energy cycle: solar energy, plant growth, pollinators' action, pest-control & satisfying yield. The hut will be adapted to extend its seasonal use & solar drier installed for fruit processing focusing on passive low-tech. solutions.



SOCIAL

interaction / reflection

Social interactions evolve through sharing: spaces, beauty, work, labour, recreation, sounds & knowledge. Even waste - as in the case of compost deposit - may be an excuse for forging new relations & mutual aid '*over the fence*'. The design challenge is to provide the client with easy manuals, work plans & pointers to satisfying recreational use of the garden-park, that ease free time for communing, & minimise labour.

3.1 Four
Hearts:

Engines
of life



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Part 3:

3.2 Biological Heart

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3.2 Biological heart - biomass

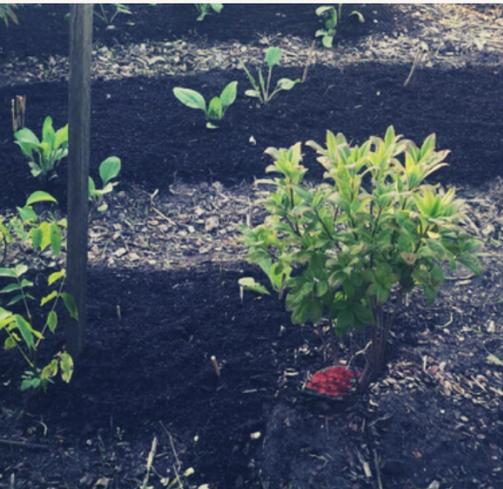
Strengths: existing mature fruit trees, good soil structure, excess organic matter from nearby

Weaknesses: some invasive weeds, some shaded areas hard to start up with undergrowth





3.2 Biological heart: Biomass



1 Action 1 Food Forest

- Introduce multifunctional varieties
- Moderate yielding edibles
- Create assemblies for easy care

3 Action 3 Composting

- Instal door in existing composter
- Introduce chop&drop technique
- Create craft compost

5 Action 5 Wildlife

- Create wildlife zone with habitats
- Instal insect hotel & bird houses
- Introduce meadow & pollinator flowers

2 Action 2 Species biodiversity

- Plant flower & herbal perennials
- Create water access for animals
- Introduce natur. fertil. & sprays

4 Action 4 Soils regeneration

- Mulch heavily paths & beds
- Add dynamic accumulators
- Stock mulch & hedgerow plants

6 Action 6 Free bio 'waste'

- Create sectors for biomass types
- Arrange donations w/ neighbours
- Install compost toilet



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Part 3:

3.3 Hydrological heart

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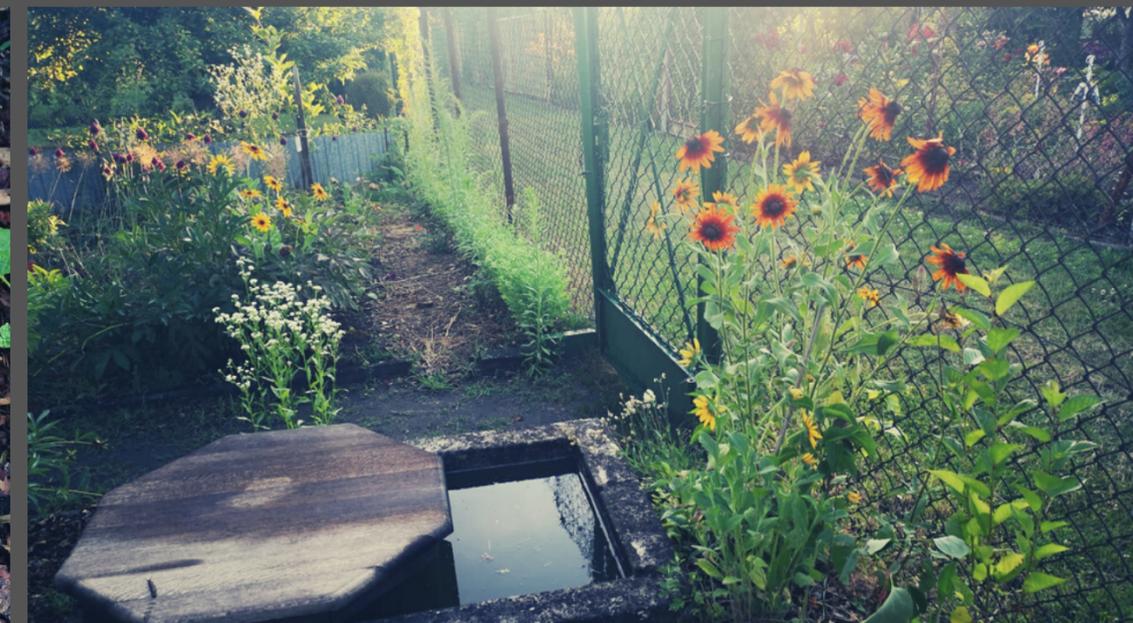
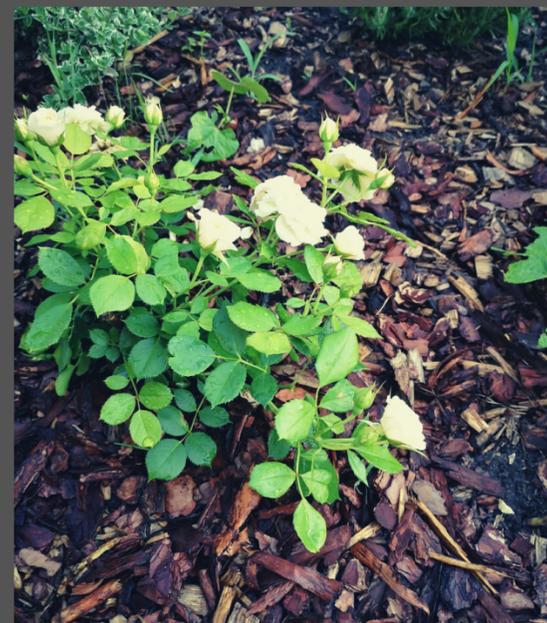


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3.3 Hydrological heart - water

Strengths: access to tap water, existing
concrete storage tanks, roof rainharvest

Weaknesses: tanks need renovation, freezing
temperatures require emptying them out





3.3 Hydrological heart: Water



1 Action 1 Rainharvest

- Attach appropriately rain-gutters
- Restore concrete water tanks
- Gravity shower/wash station

3 Action 3 Watering system

- Plan watering system (lawn&beds)
- Find solutions for full automaticity
- Water bowls/damp spots (fauna)

5 Action 5 Microclimates

- Install solar-hydro misting system
- Create shaded spots for mushrooms
- Extend plant range w/ aquaculture

2 Action 2 Soil-building

- Create dynamic microbial soils
- Apply mulch & chop&drop locally
- Apply dense vegetation guilds

4 Action 4 Ground cover

- Nitrogen-fixing trees & shrubs
- Water approach- 4 types ground:
lawn, beds, meadow, food forest

6 Action 6 Compost toilet

- Save water use & educate
- Install compost toilet system
- Collect roof water for handwash



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Part 3:

3.4 Solar heart

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3.4 Solar heart - energy

Strengths: fruiting throughout summer season,
good layout of the plot, stocked toolshed

Weaknesses: excess fruit requires extra
organising, compost from the plot insufficient to
fertilise existing vegetation





3.4 Solar heart: Energy



1 Action 1 Food forest

- Create maintenance & yield chart
- Plan for seasonal preserving times
- Connect with others in crop-share

3 Action 3 Solar/herbal drier

- Construct & install in- & outdoors
- Create mushroom cultivation spot
- Gravity shower/wash station

5 Action 5 Reducing energy

- Receive biomass donations
- Buy electric bicycle w/ panniers
- Lessen outside input & purchases

2 Action 2 Thermal regulation

- Overgrow (shade) hut with vines
- Designate cool- & sun-spots
- Install solar-water misting system

4 Action 4 Tools & Equipment

- Turn old hut into smart toolshed
- Buy long-handle tools (bending!)
- Get a hand-pulled carriage bag

6 Action 6 Pathways & rest

- Mulch heavily all paths (weeds!)
- Create few permanent rest-spots
- Employ helpers for mowing



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Part 3:

3.5 Social heart

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3.5 Social heart - reflective

Strengths: great indoor and outdoor spaces for recreation, friendly neighbours, library of books

Weaknesses: possible theft & security over winter, lack of familiarity (possible misconceptions) with permaculture approach on the side of allotments' general management





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3.5 Social heart: patterns of life



1 Action 1 Regeneration

- Focus on non-work in design
- Enhance recreational spaces
- Apply only organic solutions

3 Action 3 Celebration

- Plan an outdoor bbq&dining space
- Plan for season of home flowers
- Create a meditation spot

5 Action 5 Education

- Translate & print design in Polish
- Create a library in allotment hut
- Make a list of apps&www + folder

2 Action 2 Health care

- Learn natural plant&soil care
- Create medicinal & aromatic beds
- Choose good quality& light tools

4 Action 4 Food sovereignty

- Transplant old allotments' vines
- Connect with local food groups
- Get a hand-pulled carriage bag

6 Action 6 Protection

- Install appropriate lock systems
- Develop social microclimates
- Ensure water tanks safe for kids



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Part 2: Maps

- 4.1 Final design map
- 4.2 Implement. timeline
- 4.3 Visual glossary
- 4.4 Maintenance plan
- 4.5 Plants list - proposed
- 4.6 Review & reflection

Part 4:

Implementation

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Part 4: Implementation

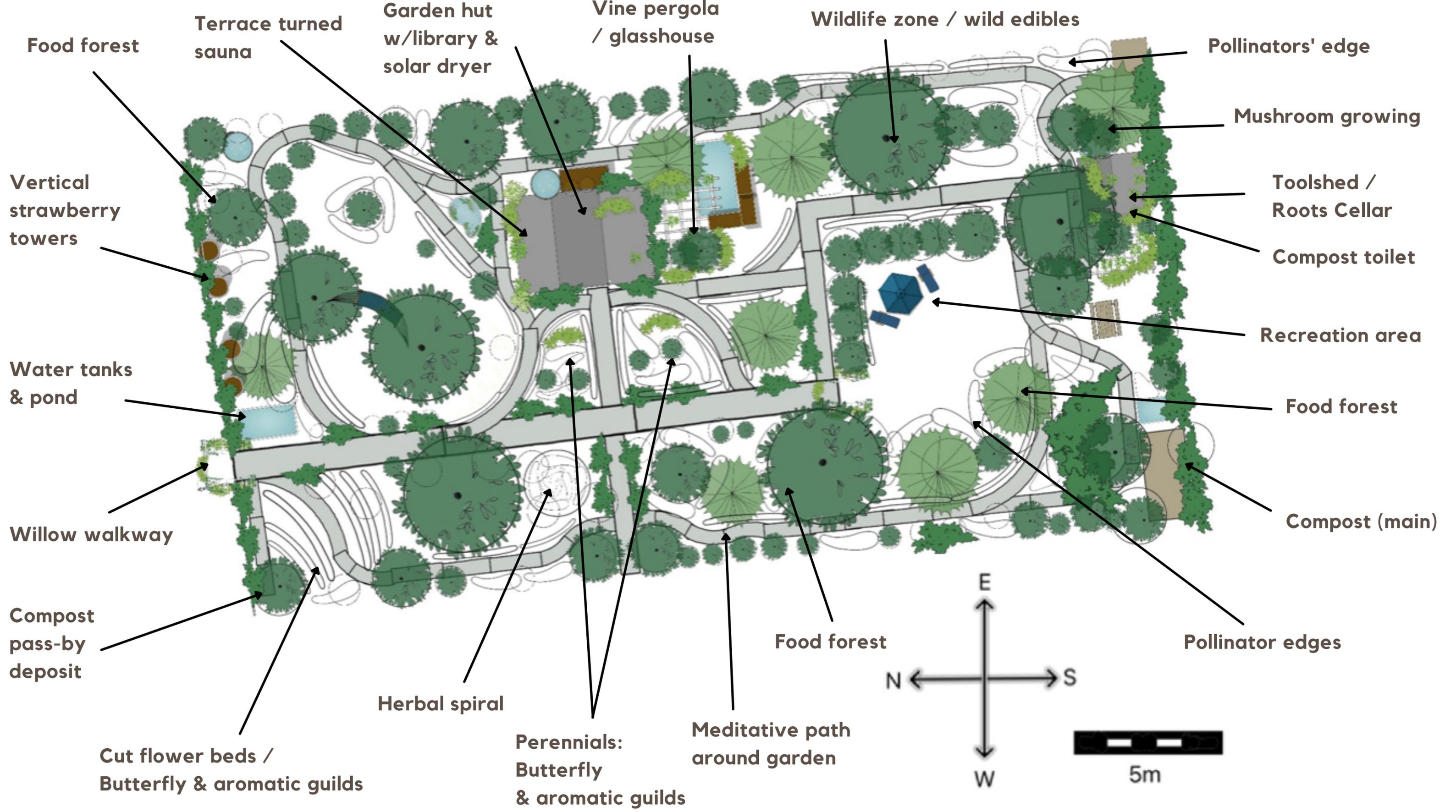
- 4.1 Final design map
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Part 4:

4.1 Final design map

THE MOTHER'S HEART GARDEN

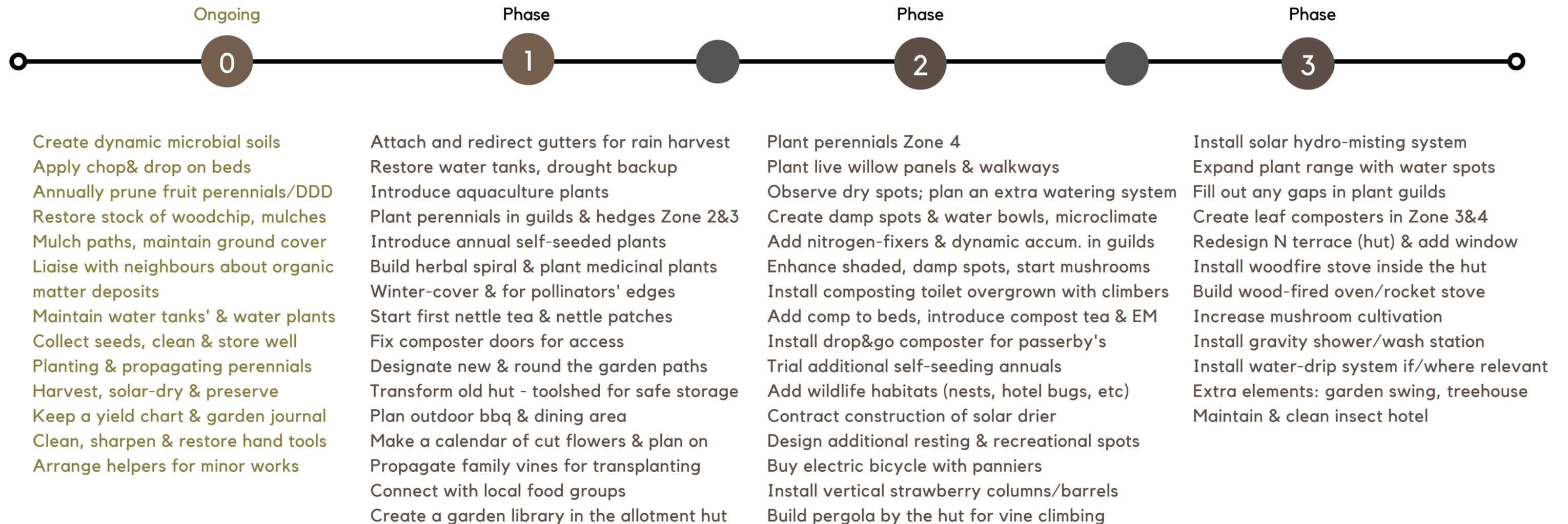
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4.2 Implementation timeline

Major implementation tasks - infrastructural, planting & garden care; works planned for spring and summer. Based on Scale of Permanence analysis.



4.3 Visual glossary - new elements

Proposed example designs of the possible elements to be designed and implemented in the garden.

Insect hotel

Toolshed station

Vertical growing

Solar drier

Salad entrance bed

Willow walkway



SOURCE: https://en.wikipedia.org/wiki/Insect_hotel#/media/File:Hoteld einsectosCasaRoja.jpg



SOURCE: [kitchenfunwithmy3sons.com](https://www.kitchenfunwithmy3sons.com)



SOURCE: https://1.bp.blogspot.com/-oN_zEHOedBE/X4JHEMfSAOI/AAAAAAAAQsc/F2BHyS9Z2R4Qfyl3dvkKaZINXpeIAk4HgCLcBGAsYHQ/s1407/strawberry%2Bbarrel



SOURCE: <https://permies.com/t/3562/kitchen/Solar-Food-Dryers>



SOURCE: <https://www.permaculture.co.uk/articles/many-benefits-hugelkultur>



SOURCE: <https://www.willownursery.co.uk/product/living-willow-criss-cross-fedge-a-extension-kit-wk104ax/>

4.3 Visual glossary - new elements

Proposed example designs of the possible elements to be designed and implemented in the garden.

Herbal spiral

Mushroom garden

Pollinator edges

Water tank plants

Compost toilet

Salad pallet



SOURCE: <https://m.facebook.com/SAKGF/photos/a.186097998100109/3396003667109510/>

SOURCE: <https://www.milkwood.net/2016/09/05/starting-a-mushroom-garden-5-ways-to-do-it/>

SOURCE: <https://www.finegardening.com/article/designing-a-stylish-pollinator-garden>

SOURCE: <https://www.permaculture.co.uk/readers-solutions/recycled-ibc-tanks-storing-water-and-growing-vegetables>

SOURCE: <https://www.permaculture.org.uk/practical-solutions/compost-toilets>

SOURCE: <https://www.permaculture.co.uk/readers-solutions/five-ways-grow-edibles-vertically>



4.4 Maintenance seasonal care plan

	Spring	Summer	Autumn	Winter
1 Biological	<ul style="list-style-type: none"> Move woodchip for soil warming Turn compost & apply on beds Start nettle tea; spray with EM 	<ul style="list-style-type: none"> Apply Effective Microorganisms Prune trees, mow grass, compost Under/inter sow green manures 	<ul style="list-style-type: none"> Collect neighbours' excess compost Rake or leave autumn leaves (zones) Cover compost bins, clean 	<ul style="list-style-type: none"> Ensure ground cover on annual beds Leave hard debris for habitats Mark self-seeded beds & meadows
2 Hydrological	<ul style="list-style-type: none"> Replenish and add on mulch Open tap water, clean rainharvest Clear water tanks of debris 	<ul style="list-style-type: none"> Maintain chop&drop routine, grass Regularly check for dry spots Add fast-growers for org. matter 	<ul style="list-style-type: none"> Replenish and add on mulch Protect frost-vulnerable plants Develop microclimates & mushrooms 	<ul style="list-style-type: none"> Make sure taps are unscrewed Restore the stock of woodchip Clear rain gutters; ensure ground cover
3 Solar & energy	<ul style="list-style-type: none"> Raise or buy seedlings, herbs & veg Plant out perennial bushes & trees Prepare receipts, preserving tools 	<ul style="list-style-type: none"> Adapt support systems for plants Prune fruit trees & bushes "DDD" Harvest, solar-dry & preserve fruit 	<ul style="list-style-type: none"> Plant perennial bushes & trees Clean tools & equipment, store well Prune raspberries, blackberries, vine 	<ul style="list-style-type: none"> Collect seeds, clean, exchange Take cuttings & propagate Read books & increase knowledge
4 Social & reflective	<ul style="list-style-type: none"> Organise spring works with family Take part in a gardening workshops Restore medicinal herbal spiral 	<ul style="list-style-type: none"> Pick tea herbs for winter reflection Make seed balls with grandchildren Regularly harvest flowers for home 	<ul style="list-style-type: none"> Take part in the Allotments' AGM Organise crop-share for friends Exchange fruit with neighbours 	<ul style="list-style-type: none"> Watch Earth-care films Visit garden to feed birds, fish Reflect on & adapt food strategy



4.5 Plants list - proposed

Suggested future plants selected for the development of food forest.

ZONE 0

ALLOTMENT HUT- OUTSIDE



CLIMBERS

- Hops, *Humulus lupulus*
- Trumpet vine, *Campsis radicans*
- Morning Glory, *Ipomoea purpurea*
- Climbing bean, *Phaseolus coccineus*
- Honeysuckle, *Lonicera*
- Passionfruit, *Passiflora edulis*

ZONE 1

FLOWER BEDS & PERGOLA



WATER PLANTS

- Common reed, *Phragmites communis*
- Cattail, *Typha L.*
- Lotus, *Nelumbo lutea*, *N. nucifera*
- Muskrat root, *Acorus calamus*
- Water Lilly, *Nymphaeaceae*
- Water Iris, *Iris pseudacorus*

BUTTERFLY GUILD

- Jasmine, *Jasminum L.*
- Phacelia, *Phacelia tanacetifolia*
- Broadband, *Vicia fava*
- Lupin, *Lupinus, L.*
- Cosmos, *Cosmos bipinnatus*
- Sunflower, *Helianthus annuus L.*
- Cornflower, *Centaurea cyanus*

AROMATIC GUILD

- Lavenda, *Lavandula angustifolia*
- Sweet peas, *Lathyrus odoratus*
- Onions, *Alliums spp.*
- Sweet goldenrod, *Solidago odora*
- Rose, *Rosa multiflora*
- Geranium, *Pelargonium graveolens*

ZONE 2

RELAXATION SPOTS



HERBAL SPIRAL

- Rosemary, *Rosmarinus officinalis*
- Oregano, *Origanum vulgare hirtum*
- Sage, *Salvia officinalis*
- Tarragon, *Artemisia dracunculus*
- Thyme, *Thymus vulgaris*

HERBAL SPIRAL

- Lemon Verbena, *Verbena peruviana*
- Basil, *Ocimum basilicum*
- Chives, *Allium schoenoprasum*
- Lemon Balm, *Melissa officinalis*
- Peppermint, *Mentha piperita*
- Lovage, *Levisticum officinalis*
- Lemongrass, *Cymbopogon citrates*
- Valerian, *Valeriana officinalis*

POLLINATOR EDGES

- Cosmos, *Cosmos bipinnatus*
- Common Chicory *Cichorium intybus*
- Marigold, *Common marigold*
- Chamomile, *Chamaemelum nobile*
- Dandelion, *Taraxacum officinale*
- Red /White clover, *Trifolium spp.*
- Comfrey, *Symphytum officinale*
- Common Evening Primrose, *Oenothera biennis*
- Californian poppy, *Eschscholzia californica*
- St John's Worth, *Hypericum perforatum*
- Foxgloves, *Digitalis purpurea*
- Borage, *Borago officinalis*
- Yarrow, yellow, *Achillea millefolium*
- Nasturtium, *Tropaeolum*
- Calendula, *Calendula officinalis*

ZONE 3

FOOD FORESTS ZONES



UNDEGROWTH

- Alfalfa, *Medicago sativa*
- Tansy, *Tanacetum vulgare*
- Wild garlic, *Allium canadense*
- Perennial Kale, *Brassica oleracea*
- Daffodils, *Narcissus poeticus*
- Asparagus, *Asparagus officinalis*

BUSH/TREE EDIBLES

- Cranberry bush, *Viburnum trillium*
- Persimmon, *Diospyros virginiana*
- Cranberry, *Vaccinium macrocarpon*
- Seaberry, *Hippophae rhamnoides*
- Currant, golden, *Ribes aureum*
- Goji berry, *Lycium chinense*
- Comfrey, *Symphytum officinale*
- Medlar, *Mespilus germanica*
- Quince, *Cydonia oblonga*
- Pear, *Pyrus*

ROOTS

- Horseradish, *Armoracia rusticana*
- Carrot, *Daucus carota (for seeds)*
- Daikon, *Raphanus sativus*

ZONE 4

WILDLIFE ZONES



COPPICE

- Maple, *Acer Campestre*
- Hazel, *Corylus avellana*

BUSH/TREE

- Elderberry, *Sambucus canadensis*
- Hawthorn, *Crataegus L.*
- Apple, crab, magenta (*Malus spp.*)
- Comfrey, *Symphytum officinale*
- Autumn Olive, *Elaeagnus umbellata*
- Fern, *Osmunda regalis*
- Rowan, *Sorbus aucuparia*

PROTECTION HEDGE (SW SECTOR)

- Black locust, *Robinia pseudoacacia*
- Blackberry, *Rubus fruticosus*
- Honey locust, *Gleditsia triacanthos*
- Mirabelle plums, *P. domestica ssp. syriaca*

MUSHROOMS

- Garden oyster mushroom, *Hypsizyguis ulmarius*

4.6 Review, Reflect, Reimagine



1 Action 1 Note-keeping

- Use moon calendar for planting
- Make visual notes on photos
- Record newly planted species

3 Action 3 Online knowledge

- Register in fb perma- groups
- Find few trustworthy websites
- Subscribe to podcast

5 Action 5 Education

- Prepare garden games for grandchildren (seed balls etc)
- Buy yourself books of interest

2 Action 2 Preserves book

- Document yields of harvest
- Collect recipes & jars
- Exchange & share with neighbors

4 Action 4 Social microclimate

- Discuss any issues along the fence
- Leave gaps in hedge for exchange & open garden view

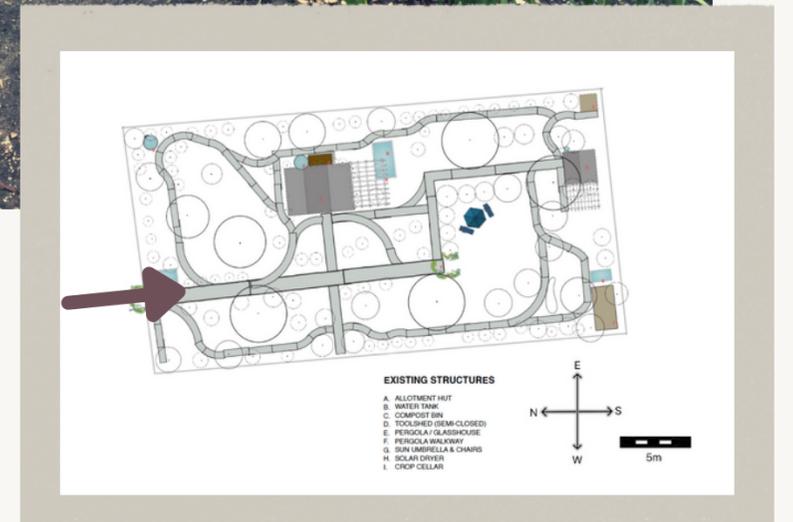
6 Action 6 Protection

- Develop relationship with one plant & follow its life cycle
- Review natural garden care ways

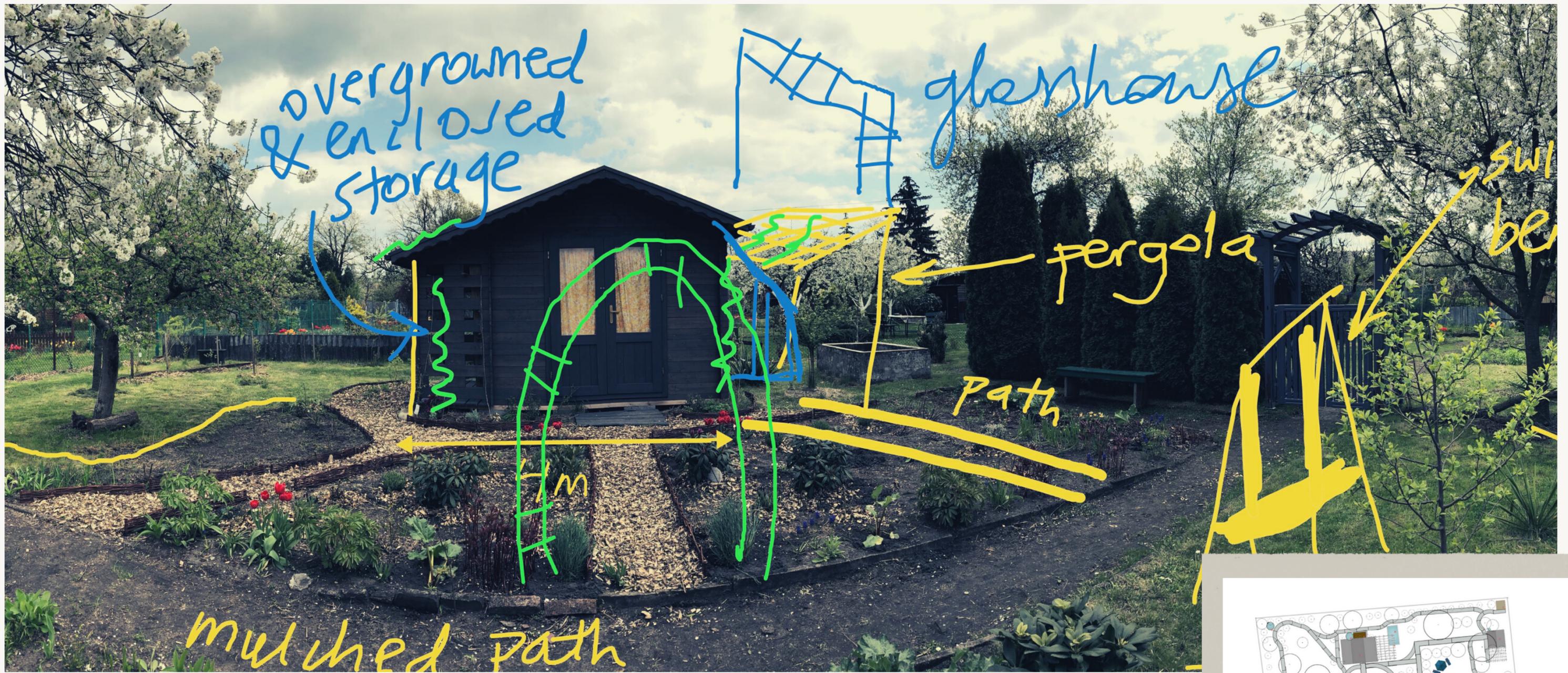


Climbers on fences and food forest along paths.

Willow walkways or pergolas with climbers.

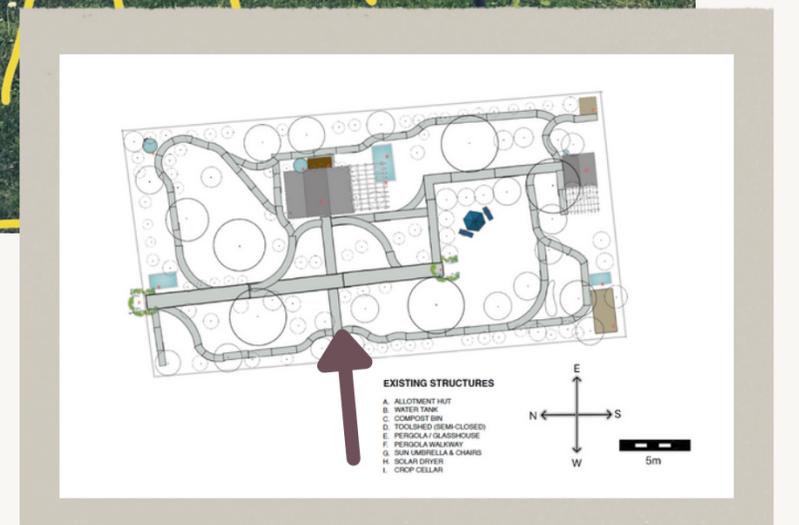


4.7 Visual notes & ideas



Perennial beds of aromatic and butterfly guilds.

South side of the hut extended by a food forest glasshouse or pergola.

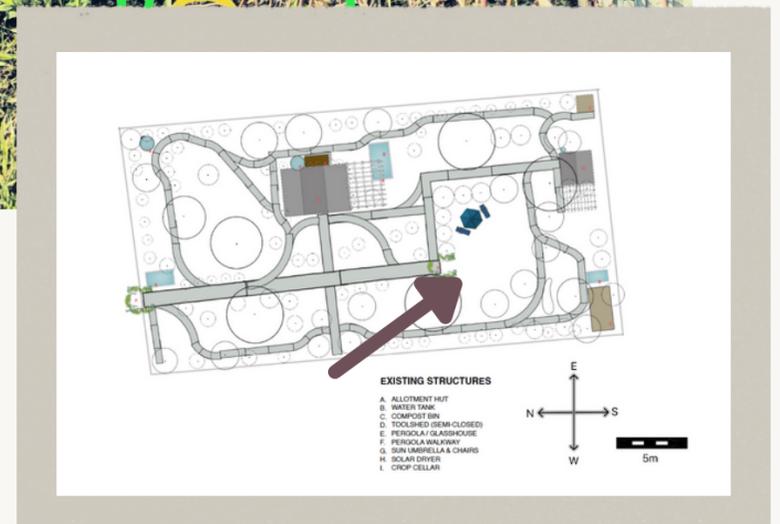


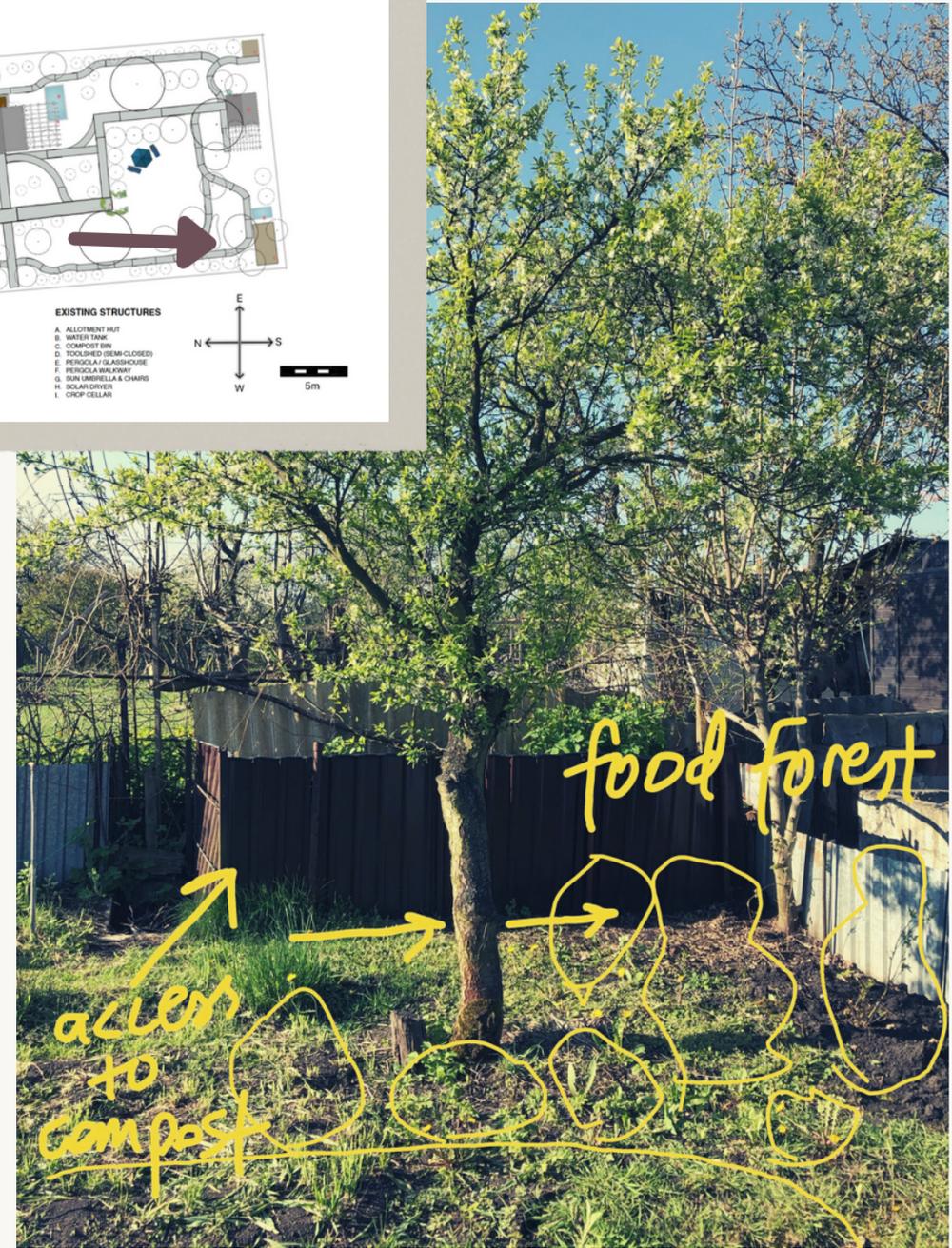
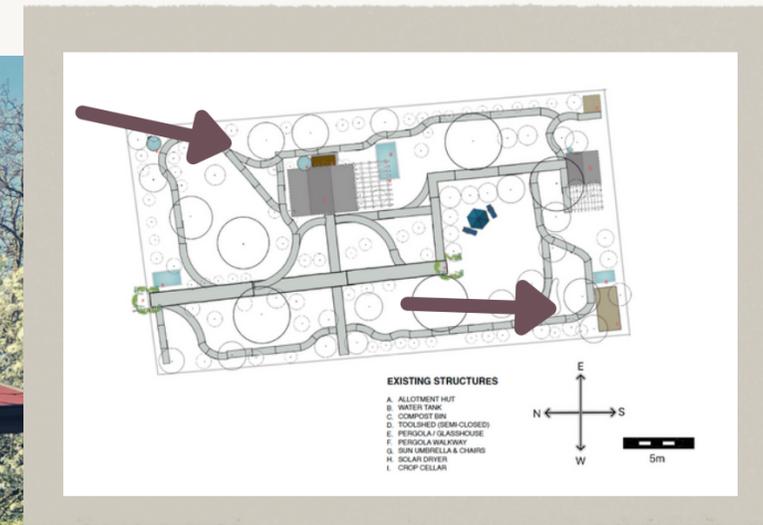
4.7 Visual notes & ideas



Recreational corner encircled by food forest; toolshed in the background. Winter view.

4.7 Visual notes & ideas

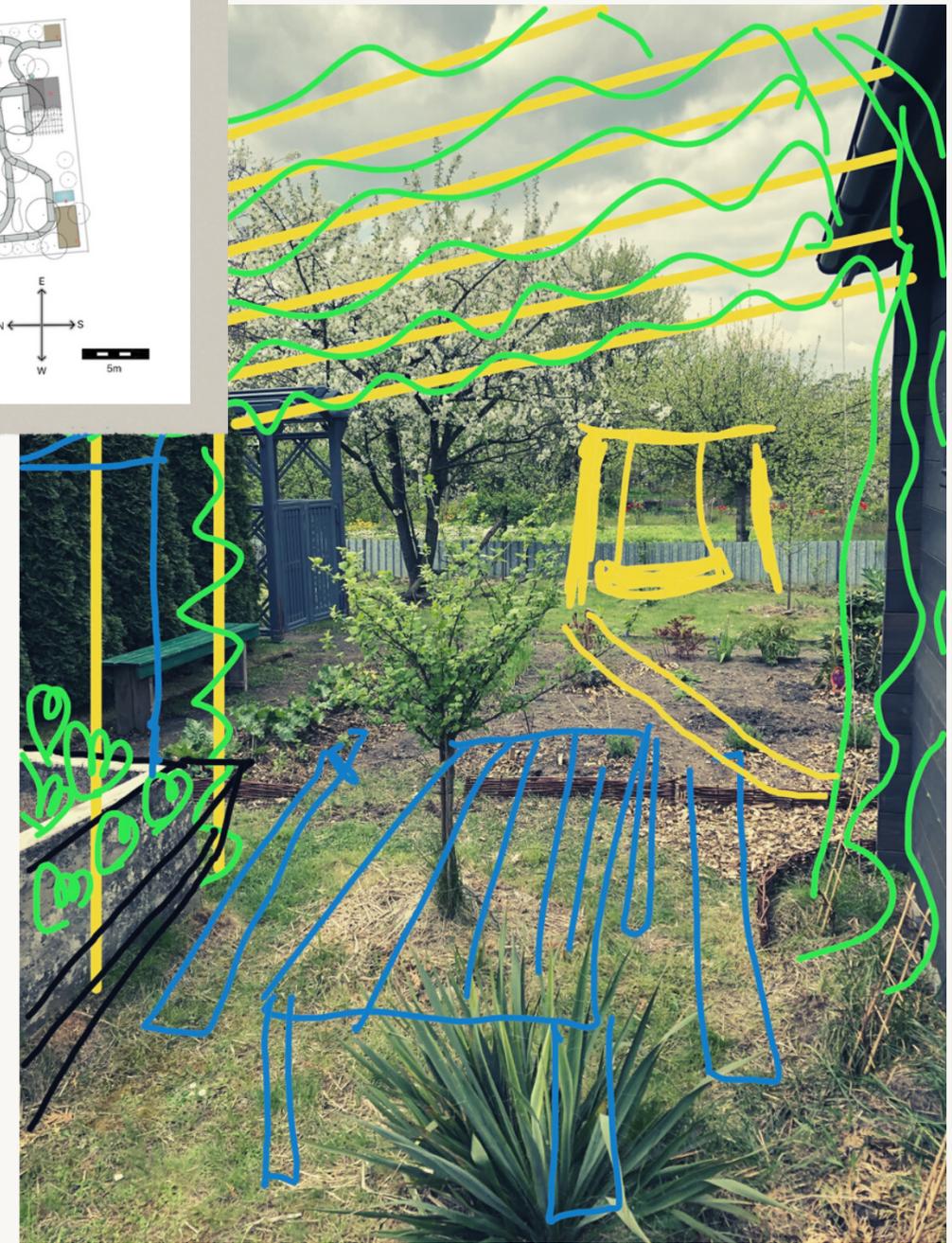
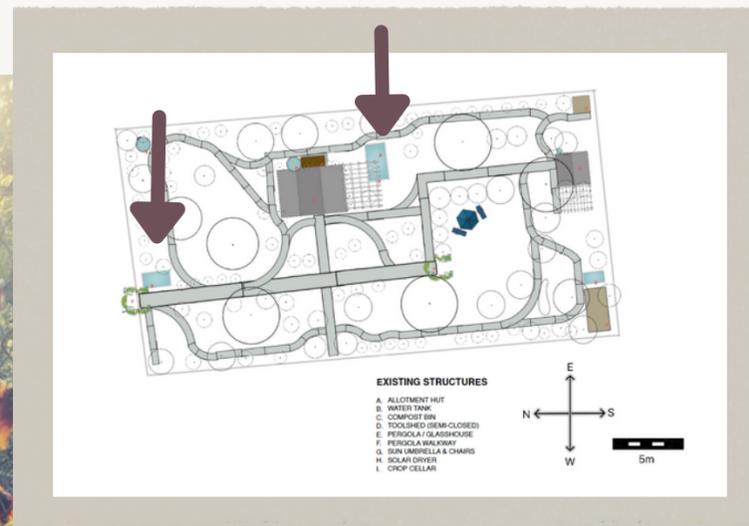




Small pond with marshy/water plants collecting excess rooftop rain harvest.

Main compost area in SW corner planned as food forest.

4.7 Visual notes & ideas



Water tank on N side by the entrance fence.

Pergola on the S side of the allotment hut.

4.7 Visual notes & ideas



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SOURCE:

**Certifying Programme
PDC Mentor**

..... Permaculture Women's Guild
..... Rachel Lyn Rumson
www.207Permaculture.com

Thank you!

Contact me if you have any questions

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