# Edible Stratagems

Strategies for growing edible gardens on former bowling green sites.

image from www.gardenbetty.com

Green Places 02
Post-Graduate Module
Leeds Metropolitan University

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# Leeds Edible Campus

A group which began in October 2012, Leeds Edible Campus supports a variety of projects all related to growing edibles. It aims to build on existing food-growing as well as design and implement new projects. Projects exist in the greatest concentration on the University of Leeds campus but are also being implemented elsewhere throughout the city of Leeds, West Yorkshire. One goal of the Leeds Edible Campus movement is to connect green spaces throughout the city of Leeds.

Leeds Edible Campus envisions a continuous corridor of productive landscapes extending from the University of Leeds Campus through Hyde Park and Woodhouse Moor. The conversion of two bowling greens into edible gardens at Woodhouse Moor will be one link in a chain of projects to realize this goal. This project will be part of the "inspirational demonstration" of growing edible plants in streats, stations, parks and elsewhere in the urban environment (Leeds Edible Campus, 2013).

# Vision

The intention of this project is to develop stratagems for growing edible landscapes within the framework of bowling green sites throughout the United Kingdom.

The edible garden designs suggested in this document for the Woodhouse Moor bowling greens are presented as a precedent for development of edible gardens in other locations across the United Kingdom. These stratagems are developed for but need not be limited to the framework of bowling green sites. Methods of edible planting intended for healing, pleasure, and/or production are applicable in most green spaces.

# Why Edible Gardens?

Reasons to grow edible gardens include:

## - Growing public (and personal) interest

Edible gardens are proliferating across the world, a trend which appears to be based on personal as well as public interest in growing food . Having beautiful *and* functional gardens began on a smaller scale but is now emerging in mainstream landscapes as well.

## - Financial/economic opportunity

The potential for profit (either monetary or goods-based) exists when growing edible plants, because food is valuable. Historically, communities have organized around this basic need, as they did in England during World War II.

## - Sense of control for individuals

The Dig for Victory campaign in England during the second World War empowered people and communities by providing them with a means to feel "in control" of at least their diet. It was also a way for citizens to feel they were contributing to the war effort. During this time, allotments were promoted and citizens were encouraged to convert their private gardens into productive edible landscapes. By 1943, over a million tons of vegetables were being grown in home gardens and allotments. Although the United Kingdom is not (Home Sweet Home Front, 2011).

## - Fresh and local

Citizens now possses common knowledge of what quality produce tastes like. Local markets are expanding in recent years, thanks to the support of local shoppers seeking fresh produce from local farms rather than imported produce which hass often been picked early and artificially ripened or otherwise preserved for appearance but not necessarily taste.


War gardens for victory poster. Image from www.carrotmuseum.co.uk

# Why Edible Gardens?

## - National food security

As previously stated, there is increasing need and desire among the general public to grow and buy food closer to home. International, national and local governments ought to be likewise interested in food production within cities, regions and borders in order to escape reliance on imorted foodstuffs. Citizens watching their budgets seek to buy straight from the source so they can avoid costs of import or middlemen companies (grocers which buy from farmers and then sell to shoppers). On a larger scale, national costs of imports will only increase according to current trends, a factor which neds addressing. Furthermore, putting money into local businesses strengthens local economies and thus the national economy as a whole is improved.

A main factor in the world today which presents the need to reduce the import of foodstuffs is the approaching oil scarcity and subsequent impact on food production and distribution. According to an article written in 2005 (Church), "Oil output is expected to peak in the next few years and steadily decline thereafter." Why this applies to national food security is because the "modern, commercial agricultural miracle that feeds all of us, and much of the rest of the world, is completely dependent on the flow, processing and distribution of oil, and technology is critical to maintaining that flow." So as oil reserves deplete and become excessively expensive, the current global food system will be in danger of collapse. This being said, nations as well as individuals ought to be supporting the shift from a global food system to a localized food system, which will be able to better withstand stresses like oil scarcity.

## - Health needs in cities

*We live in an increasingly urbanized world, where open or green space is becoming less common and more highly valued. Landscapes provide an extension of the livable environment where people interact with their world and each other. Unfortunately, many landscapes are neither well managed nor sustainable, with poor plant choices, site conditions, and little or no maintenance. A variety of problems make such places unhealthy or unsafe for plants, humans, and animals.*
*- Sustainable Horticulture, 2013*

Green space in cities is valuable, in terms of both physical health and economic health. For instance, people need outdoor spaces to exercise and relax in. Also, city environments are improved by breaking up hardscape and built structures with softscapes and plants, which lessens the heat radiating from concrete, for instance. Today, the movement of growing edible plants in cities - urban agriculture - is especially relevant to health, since edible gardens can provide jobs (addressing economic health) and generate nutrient-rich foods (addressing physical health) for citizens otherwise unable to access it. City green spaces can address the needs of the city and the people.

# Growing Pains

## The limited availability of land for growing edibles is inhibiting prospects for true food sustainability.

Edible garden layout. Image from www.resilientcommunities.com.

After decades of dying interest in allotments, today's global environment prompts a return of the trend to "grow your own". Since the end of the Second World War, interest in allotments gradually declined for many years (Parliament, 1998). However, there has been a great shift in demand for allotments in the past 20 years. A study conducted by the National Society of Allotment and Leisure Gardeners in 2009 revealed an obvious increase in waiting lists for allotment plots across England (Campbell: 2). in 2010, BBC News also reported a "phenomenal" rise in demand for allotment space, a happenstance seeming to coincide with rising food prices. Indeed, as the year 2014 approaches, food prices continue to elevate, and so does interest in growing edibles. Such a resurgence in demand for land to garden reflects rising public interest in locally grown food and healthy eating habits.

It is imperative that local and national governments address the public outcry for more allotment land, because (Campbell, 1998: 2). A recent article in the Telegraph suggests that this craze to grow your own is a fad that will subside as people grow weary of allotment upkeep (Appleby, 2013). However, whether a short-term trend or not, this interest in allotments reflects a greater reality that cannot be ignored - that the world is fighting an economic recession. Growing food closer to home will help common people and leaders of nations. The price of purchasing local foods is less expensive for everyone. Also, unemployed citizens can be provided with jobs (Campbell 1998: 2). Growing more edible gardens in populated areas could be the solution to ensuring a dependable food supply.

Unfortunately, the limited availability of land for growing edibles is inhibiting prospects for true food sustainability. City councils have concerns about leasing land out and not getting it back (BBC News, 2010). Indeed, an increasing number of councils are trying to increase rent, shrink plot sizes or relocate allotment sites to make way for other development (Harris, 2013). Allotment-centered controversies throughout the United Kingdom make it evident that more land for growing edibles is needed. The National Society of Allotment and Leisure Gardeners reports this year that enquiries about threats to allotments have increased from about one a week to one a day. Their 2012 survey revealed that 74 percent of allotment holders are worried about their plots being taken away. Indeed, losing an allotment site is of great concern since 100,000 people are currently on waiting lists to get plots (Harris, 2013). Considering that allotment demand is greater than the number in existence, it seems that not only do allotment sites need to be protected but new sites for edible gardens need to be established.

# Growing Pains

## Allotment-centered controversies throughout the United Kingdom make it evident that more land for growing edibles is needed.

Although there are around 300,000 allotments in the UK, more than 100,000 people are on waiting lists. Meanwhile, places like the Farm Terrace Allotments in Watford, England are being threatened with shut-down. The predicament is that land is a limited resource - just as oil and water are - and land uses shift according to interest groups. It seems the general public would have more land devoted to growing edible gardens, but as the Harris (2013) comments on the situation, "For the past century, councils have prided themselves on giving people small patches of land to cultivate. But now, with money and land in short supply, many want to take them away."

Vincenzo Santarsiero and his daughter, Rosangela, on their plot at Farm Terrace. Santarsiero has worked his plot at Farm Terrace Allotments for about 40 years. "If I have to start again from scratch – no way," he says (Harris, 2013).

Sara Jane Trebar on her threatened allotment at Farm Terrace in Watford. "I'm worried about the detrimental effect that getting rid of these plots will have on people's health.," she says (Harris, 2013).

There is no clear solution to the issue of land scarcity, but one possibility to address the need of more edible garden space is that of conversion. Existing green spaces can be examined and new locations for edible gardens be located. The conversion of bowling greens into edible gardens is one such example of this.

Photographs by Martin Godwin for the Guardian. Images from www.theguardian.com.

# An Opportunity

The high maintenance required to keep up bowling greens is threatening their preservation, since city budgets are tight and interest in the sport of lawn bowling is waning. Some authorities are suggesting out-phasing a portion of bowling greens (Bowls England, 2013). At the Woodhouse Moor bowling greens, two of the three greens are soon to lose funding from the city council. This provides the opportunity to implement a couple strategems of edible garden design within the framework of the decommissioned greens.

## Maintenance and Costs Considerations

Bowling greens necessitate mechanized aeration to combat compaction, fertilizers to keep the grass healthy, substantial watering to keep the grass green, freqeunt mowing, special tests of the soil depth and even analysis of the degree of slope or flatness (Leisure Turf and Landscape Ltd., n.d.). Edible garden maintenance requires tilling, planting and watering, but there are possible ways for these needs to be fulfilled at a much lower cost than that of bowling greens upkeep. For instance, the presence of a variety of plants inherently improves soil quality needed to keep plants healthy. Moreover, combinations of vegetables benefit each other and lessen the need for expensive pesticides. Also, people from the community are able to get involved in edible gardening upkeep, whereas professionsals are needed to maintain bowling greens. Another possibility is that converting a portion of bowling greens into edible gardens could in fact generate funds for the preservation and maintenance of other bowling greens to be kept!

Bowling green. Image from www.strangehistory.net

## Preserving Green Space in Leeds

Another benefit of creating edible gardens on former bowling green sites is that it means preserving green space in the city. If not repurposed for another use - being pleasureable and productive - these decomissioned greens might end up abandoned, overgrown and unuseable or even hardscaped. Therefore, this design propositon is for the health of the city of Leeds, particularly that of the Woodhouse Moor and Hyde Park communities.

# Lawn Bowling

Lawn bowling is believed to have developed from the Egyptian game "skittles" which involved round stones. Records of this game date back to 5,000 B.C. The sport developed into a variety of games across the world, leading to lawn bowling in Scotland, England, Ireland and Wales before spreading to other parts of the world. The oldest lawn bowling site still in operation is in Southampton, England. It is believed to have been in use since 1299 A.D. (Vale of Leven Bowling Club, 2013).

Today the sport of lawn bowling continues, primarily with the guidance of groups like the English Bowling Association - formed in 1903 - and the British Crown Green Bowling Association (BCGBA). Many members of these groups are of the older generations.. However, people of all ages are invited to participate! The BCGBA (2012) web page says it this way:

> *All the family can play Crown Green Bowls, from grandchildren to grandparents and it is a great sport for making new friends. It is a non-contact sport which is enjoyed by all, including people with disabilities.*

Vale of Leven Bowling Club in 1928; image from www.valebowlingclub.co.uk

Bowling teams at play. Image from www.deddington.org.uk

Young people bowling. Photographed by Steven Crabtree. Image from www.stonnington-leader.whereilive.com.au

## Disclaimer

This study does not suggest eliminating bowling greens completely. Rather, a portion of bowling green lawns ought to be preserved and kept up, keeping the sport of lawn bowling alive.

# Addressing Conversion

Converting bowling green lawns into edible gardens will require some adjustment to the soil and structure of bowling green lawns. As afore mentioned, bowling greens are treated with chemical fertilizers. To ensure that edible plants grown on these sights do not contain harmful residual chemicals, the existing soil ought to be either removed and replaced with soil appropriate for vegetable growing or remediated by growing cover crops - such as peas - which can soak up harmful chemicals and trace metals. The former may be more expensive, whereas the latter may take more time. Other alternative solutions might be proposed , but regardless of which action taken, before an edible garden can be grown the site soils must be tested and prepared for growing vegetables and fruit.

Soil depth is another factor which must be addressed in altering bowling green sites to be suitable for growing edible plants. Bowling green thatch (organic matter just below turf surface) is kept at a depth of only about 25-50 mm. In order for vegetables to have healthy or "effective" root depth, the thatch depth would need to be increased. According to author Cathel Hutchinson (n.d.), who writes an article on "the effective root depth of vegetables"

> *When vegetable plants are seeded into the ground, they develop roots. Roots act not only to anchor a vegetable plant to the earth, but also take up water and nutrients from the soil, which are essential to the vegetable plant's growth. The roots of different vegetable plants penetrate to different depths, and it is important to know the effective root depth when planting your crop.*

Hutchinson specifies that there are general categories of rooting depths that edible plants can be grouped in:

1. Shallow rooting = 45 - 91 cm (18 - 36 in)

   Examples are broccoli, cabbage, cauliflower, corn, garlic, leeks, lettuce, onions, potatoes, radishes and spinach.

2. Medium rooting = 91 - 122 cm (36-48 in)

   Examples are beans, beets, carrots, cucumbers, peas, squash and turnips.

3. Deep rooting = > 122 cm (> 48in)

   Examples are artichokes, asparagus, parsnips, pumpkins, winter squash, sweet potatoes and tomatoes.

# The Purpose of Gardens

Throughout history the function of green spaces has shifted according to public needs and demand. Although styles of expression changed over time, common themes remained. Three reoccuring intentions for gardens evident in history and the present day are:

1. gardens for production
2. gardens for pleasure
3. gardens for healing

The two design alternatives presented in this booklet are based upon studies of former and existing gardens. Elements of production, pleasure and healing will be expressed and identified in the designs. The following case studies - along with the research presented prior to this point - will help the reader to understand the goals and intentions of the design solutions to be proposed.

A designed garden space with edibles and ornamentals. Image from rocklandmastergardener.blogspot.co.uk_p_edible-gardening.html.

Gardens for Productivity - Historical Example

# Walled Kitchen Gardens

The walled kitchen garden were a standard part of large country houses during the Renaissance and Victorian eras. They were highly productive places, growing food, herbs and flowers for the family, staff and guests of the estate (Walled Kitchen Gardens Network, 2002).

Walled kitchen gardens succeeded in growing food at all-year-round by developing techniques such as warming walls and even steam-heating systems to keep the garden productive. Walled kitchen gardens were “intensive food factories” and they were also beautiful.  Featuring a diversity of plants in a formal layou, these gardens were an “elegant blend of the aesthetic and the practical”  (Walled Kitchen Gardens Network, 2002).

Walled Kitchen Garden at Harewood House, North Yorkshire. Photographed by Jillian Broeckel.

Gardens for Productivity - Case Study

# Beacon Food Forest

*"The goal is to design, plant and grow an edible urban forest garden that inspires our community to gather together, grow our own food and rehabilitate our local ecosystem" - Beacon Food Forest, 2013*

The Beacon Food Forest is a 28,000 square kilometer park located just 4 kilometers from the city centre of Seattle, Washington, USA (Geere, 2013). The project is labelled as a 'community permaculture project' and its goal is to provide quality edible food for the public. Also, the food forest is intended to unify a diverse community and support ecosystem rehabilitation (Beacon Food Forest, 2013).

Since 2009, volunteers have planted fruit trees and edible plants plants on site. Phase 1 of the park is to be completed early 2014. (Beacon Food Forest.org, 2013).
So far the Beacon Food Forest has been a terrific success, not only in its production of quality food but also in its publicity and the interest in urban farming it has sparked.

logo from beaconfoodforest.org

Squash arche; image from www.beaconfoodforest.org

Key Points:

- Creative use of vegetable structures (poles etc.) to form environment.
- A 'community project' implemented by volunteers.

Applicability :

- Involve community around Woodhouse Moor and Hyde Park in implementing and managing the garden.
- Use structures like frames and poles to create vertical and overhead form in the garden.

# Urban Farming in Boston, U.S.

Boston Natural Areas Network in recent years has been renovating community gardens throughout the city. As a cuty of industry, the soils are often heavily contaminated, which makes edible gardening a health concern. Thus, urban soils need to be improved and remediated. Boston University toxicologist Wendy Heiger-Bernays says that the goal is to make "non-pristine" city soils as safe as possible, so that the "many delights of gardening can flourish in the heart of the concrete jungle" (Kessler, 2013).

Key Points:

- Urban soils being remediated for growing healthy edibles. It's possible and effective!

Applicability :

- The quality of soil at the Woodhouse Moor bowling greens needs to be analysed prior to safely planting edible plants on site.

*In cities around the globe, gardeners and farmers are digging into backyards and vacant lots, replacing blighted eyesores with lush, productive vegetation. But as in Boston, these other urban soils are often heavily contaminated, prompting questions about potential health consequences of this supposedly wholesome activity. And while alternative growing methods such as rooftop gardens and hydroponics duck soil contamination issues, they tend to be more expensive and are unlikely to replace gardening in the ground any time soon, sources say.*

Gardens for Pleasure - Historical Example

# Knot and Parterre Gardens

Parterre gardens developed in the late 1600s and became the feature of gardens in the early 1700s (Heise, 2004). They were of more intricate and elaborate patterns than knotwork gardens and the planting palette changed from herbs and small flowering plants to larger plants which could be better seen from windows, balconies and higher ground. The French designer Claude Mollet chose to use clipped boxwood as the boundaries of the garden, a practice which continues to be used in formal gardens to this day (Exterior Worlds, 2008).

Key Points:

- Creative design with plants within the framework of a square.
- Patterned in designs for beauty and interest.

Applicability :

- The Woodhouse Moor bowling green sites could easily be divided with boxwood patterned after knot or parterre gardens.
- Beautiful design potential in shaping an edible garden in this style for pleasure.

image from www.lilyoake.blogspot.com

# The Garlic Farm

This display by The Garlic Farm won a Royal Horticultural Society 'Gold Medal' at the at the Hampton Court Flower Show in 2005. It was awarded for its phenomenal display of produce in the Growing and Showing Marquee. The presentation included 40 varieties of garlic from around the globe, all proven possible to grow in the UK grown on the Isle of Wight, UKintroduce many varieties of garlic beautiful in bloom - a truly innovative and attractive presentation of edible plants (Walker, 2005).

Key Points:

- Goals of productivity and aesthetic desires can be achieved simultaneously.

Applicability :

- Integrate beds with mixed varieties of garlic in edible strategems.

Garlic Farm display at RHS Hampton Court in 2011. Image from www.oxoniangardener.co.uk.

# Rotherfield Edible Playground

The Rotherfield Primary School in Islington, London has transformed part of their outdoor space into an inviting fruit and vegetable 'edible playground'. As the second pilot program for Jamie Oliver's Kitchen Garden Project, this garden has been in operation for about four years and is a great success (the Edible Schoolyard Project, 2012).

*Every child in this world needs to have a relationship with the land... to know how to nourish themselves... and to know how to connect with the community around them.*

*— Alice Waters*

Key Points:

- Gardens can be educational in a creative, engaging way.
- Involves children in a healthy, hands-on experience.

Applicability :

- Consider children as a unique user group who will experience the gardens differently than other user groups.
- Integrate educational signage into the Hyde Park edible garden designs.

# Monastery Garden

Medieval gardens were often utilitarian, growing fruit, vegetables and herbs for a household or business. Although functional, such gardens were sometimes situated within a larger garden or park intended for strolling about and relaxing in nature. Monastery gardens were generally closed to the general public. They grew herbs and edibles for the monastery kitchen as well as flowers to cut for decoration in the church. Many herbs grown were used to make medicines, tinctures, and poultices (Heise, 2004).

Monastery garden. Images from www.vegetablegardener.com.

# Glastonbury Healing Gardens

The Glastonbury Healing Gardens Cooperative began in the summer of 2004 with a vision to create a "tranquil community garden space" (Glastonbury Healing Gardens Cooperative). The chosen site was an empty field adjacent to Healing Waters Sanctuary, a spiritual and healing retreat which offers accommodation and therapies such as meditation, yoga, acupressure and aromatherapy (Healing Waters, 2013).

At Glastonbury Healing Gardens are areas to grow vegetables, as well as zones created to be native wildlife habitats. There is also gathering space for people to "meet, relax and find a moment of calm". The garden beds are laid out in a circular formation, a mandala, believed to be sacred. Juliet Yelverton - owner of the adjacent Healing Waters Sanctuary and the one who first envisioned the cooperative - works in the garden herself, harvesting edibles (Glastonbury Healing Gardens Cooperative, 2013).

Glastonbury Healing Gardens; image from www.divine-yoga.org

Key Points:

- Area to grow vegetables intermixed with native wild life habitats = healthy space for humans and creatures.

Applicability :

- Intermixing non-edibles with edible plants for the purpose of the health of the land and animals besides humans.

# The Sensory Garden, Kansas

The Sensory Garden located at the University of Kansas is located next door to the Audio-Reader building, which is for the visually impaired. In 1996 the garden began as part of Make a Difference Day when volunteers first planted a simple garden of sensory plants like lavender and rosemary (Unruh, 2007).

Today The Sensory Garden has expanded to include a walkway and a gazebo. Along the path are scented plants and textured plants, such as lamb's ear, which has soft, fuzzy leaves. Other sensory elements of the garden include wind chimes as a sound element and signage with brail (Unruh, 2007).

Key Points:

- Use of textured and scented plants to add sensory elelements to the garden.
- Signage with brail for the visually impaired.

Applicability :

- Integrate sensory plants into the edible garden de signs at Woodhouse Moor bowling greens.
- Include brail on signage throughout the gardens.

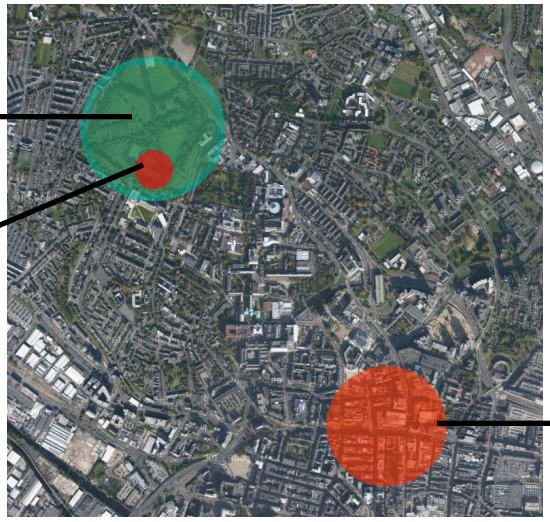

Lamb's ear.


Lavender.

The Sensory Garden. Images from www.flyoverpeople.net.

# Woodhouse Moor: Area Profile

## Context




The Woodhouse Moor bowling greens are located approximately a twenty minute walk from the city centre of Leeds.

## User Groups

The main groups of people who frequent Woodhouse Moor are:

1. Students passing to and from the adjacent University of Leeds
2. Individuals exercising, either walking, jogging, or bicycling.
3. Team sports groups, playing football, tennis, etc.
4. Families with young kids out for an outing, especially on the weekends

## Circulation

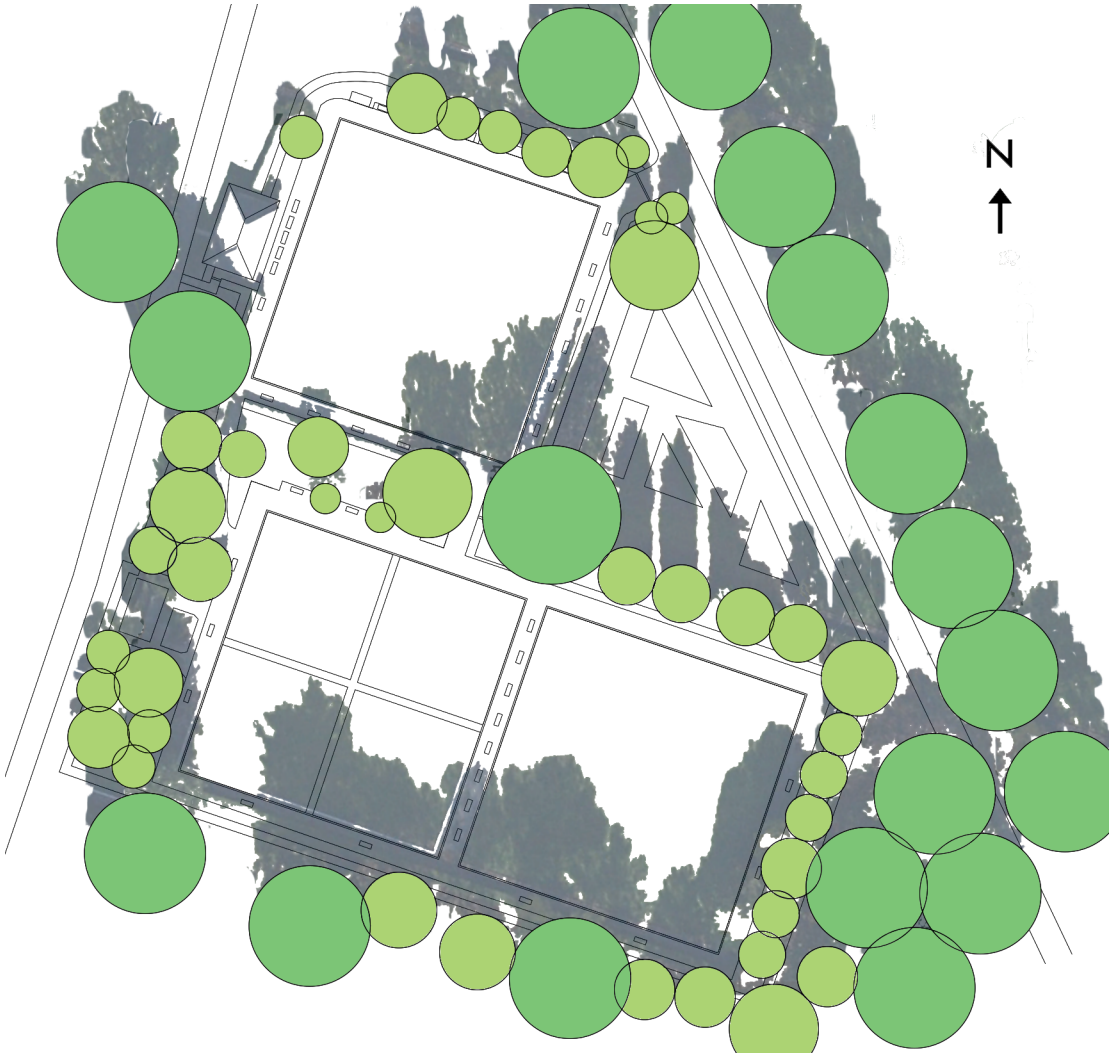
The main circulation routes around Woodhouse Moor.


Vehicular roads encircle Woodhouse Moor, with multiple bi-secting pedestrian and bicyble routes throughout the green space. This is a high traffic area.

# Woodhouse Moor Bowling Greens

## Site Analysis

Sun/shade patterns with existing tree locations:
(Based on average of longest shadows per day throughout the year.)




## Conclusions

Existing trees surrounding the bowling green lawns cast partial shadow on the site during the day. None of the bowling greens are overly impacted by the shadows, which is good for growing edible plants. The upper green is the least shaded and the lower right green the most shaded. For this reason, the upper green will be the best location for the productive-focused desgm strategy.

# Woodhouse Moor Bowling Greens

## Site Analysis

Important existing elements:


## Conclusions

The location of the club house and main entrance suggest that the upper bowling green will be the most visible location for an edible garden. This observation, along with knowledge of the average shadows from trees on site, implies that the upper lawn be the treated as the first stage of edible garden design at the site.

Benches spaced throughout the site - once used for observing lawn bowling games - will provide seating for visitors to the gardens to rest, relax and observe the gardens.

# Woodhouse Moor Bowling Greens

**Site Images** At various times of day and year.



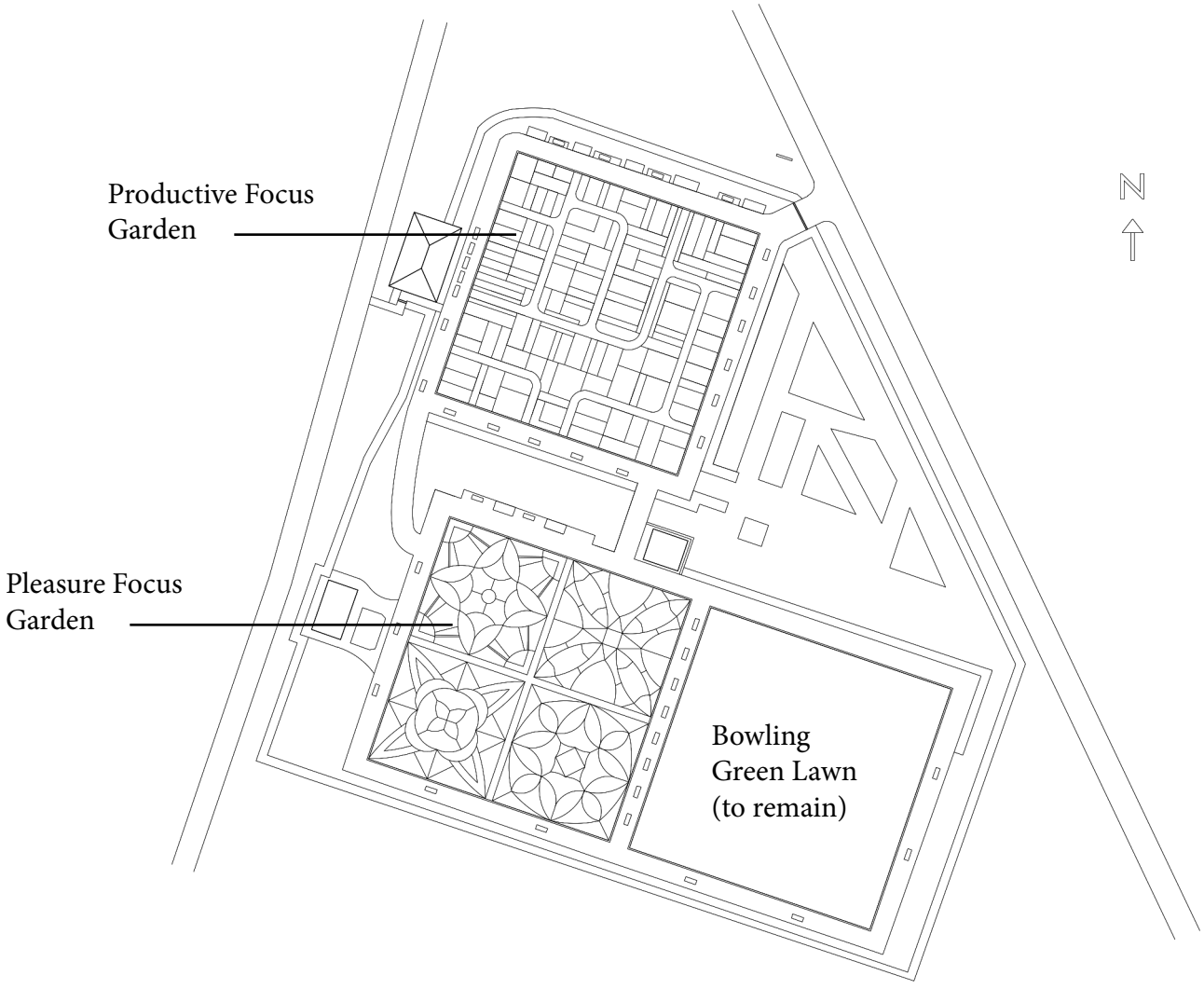





# Design Strategy: Intentions

Two proposed design focuses fulfill three intentions:

1. Productivity
   A garden intended for max production of edibles.
2. Pleasure
   A garden intended to be aesthetically beautiful for enjoyment
3. Healing
   Both gardens infused with elements of healing; elements that engage the senses and promote well-being




## Disclaimer

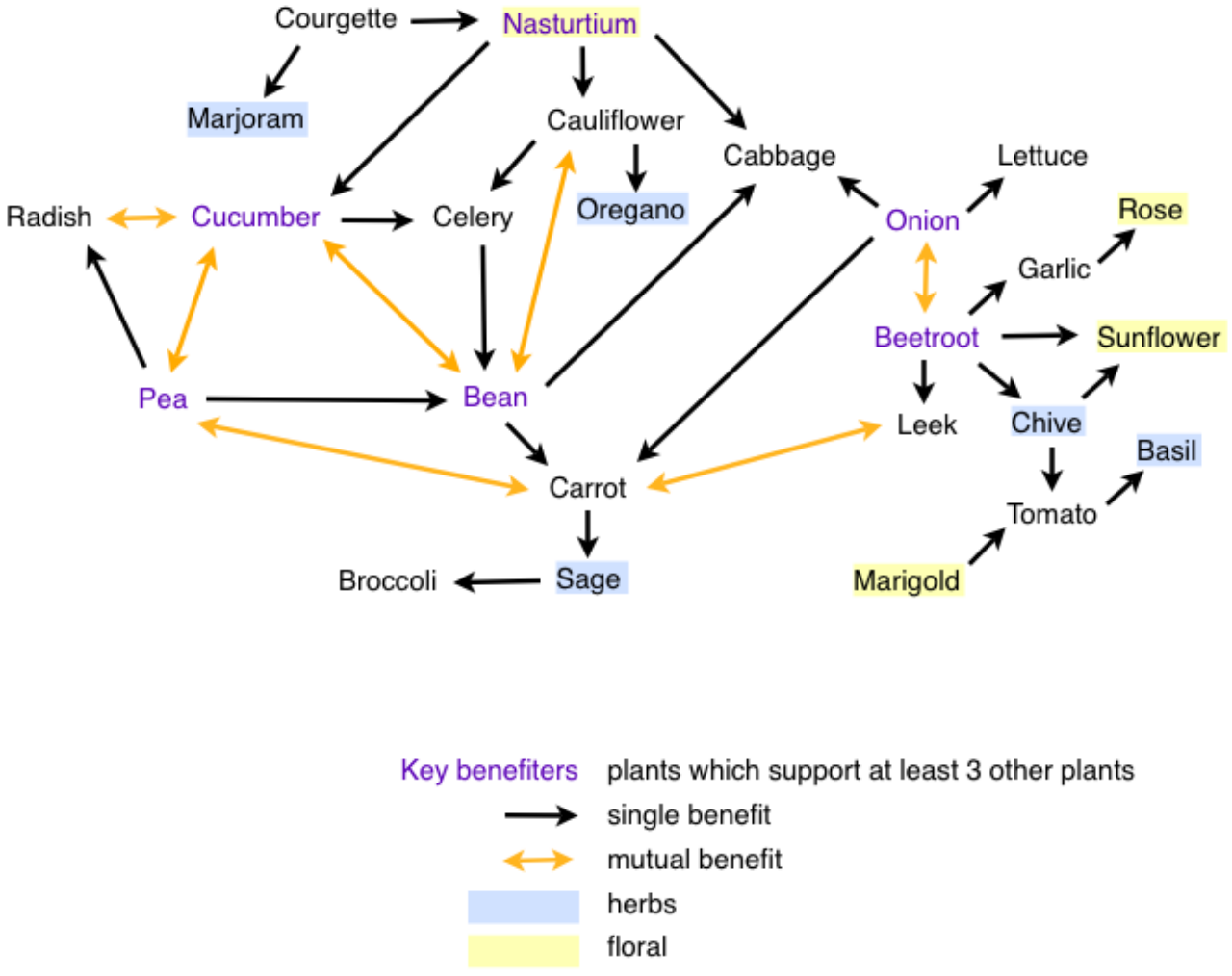
These stratagems are developed for but need not be limited to the framework of bowling green sites.

# Design Strategy: Plant Relationships

Companion planting is a method of growing plants which benefit other plants near one another. Sometimes there are mutual benefits, such as there is between pea and cucumber plants. In this instance, pea plants fix nitrogen in the soil and cucumber plants.

Tall-growing plants are best placed where they don't block the sun from other plants which need the light. Other plants - like squash - benefit from the shade of taller vegetation, such as sweetcorn.

Sprawling plants like squash and cucumber are best planted with either space to send out runners or with supporting poles for vines to grow up. By staking plants which might otherwise spread out long distances, ground space can be preserved for other plants.



# Design Strategy: Healing Elements

Elements which engage the senses and promote well-being

Healing plant pallette:

Sage

Thyme

Lamb's Ear

Rosemary

Tansy

Allium

Other sensory elements:

1. Wind chimes

2. Signage with brail

3. Guidance walkways
   (texture changes in the path to signal change in direction or a place to stop.

# Design Strategy: Staggered Planting

**Planting Timetable** For crops in North Yorkshire.

| plant | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bean - broad | | | ■ | ■ | ■ | | | | | | | |
| bean - French | | | | | ■ | ■ | | | | | | |
| bean - runner | | | | | | ■ | | | | | | |
| beetroot | | | ■ | ■ | ■ | ■ | ■ | | | | | |
| broccoli - Calabrese | | | | | ■ | | | | | | | |
| broccoli - sprouting | | | | | ■ | | | | | | | |
| brussels sprouts | | | | ■ | ■ | ■ | | | | | | |
| cabbage - summer | | | | ■ | | | | | | | | |
| cabbage - winter | | | | | ■ | | | | | | | |
| cabbage - spring | | | | | | | ■ | ■ | | | | |
| carrot | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| cauliflower - summer | | | | ■ | | | | | | | | |
| chard | | | ■ | ■ | | | | | | | | |
| courgette | | | | | ■ | ■ | | | | | | |
| cucumber | | | | | ■ | ■ | | | | | | |
| garlic | | | | | | | | | | ■ | ■ | |
| kale | | | | | ■ | | | | | | | |
| leek | | | | ■ | ■ | | | | | | | |
| lettuce | | | | ■ | ■ | ■ | ■ | | | | | |
| marrow | | | | | ■ | ■ | | | | | | |
| onion - set | | | ■ | ■ | | | | | | | | |
| onion - spring | | | ■ | ■ | ■ | ■ | ■ | | | | | |
| parsnip | | | ■ | ■ | | | | | | | | |
| pea | | | ■ | ■ | ■ | ■ | | | | | | |

The purpose of staggering the planting times of sets of plants is to ensure a longer and more continuous period of harvest. For instance, rather than plant an entire crop of potatoes at once, staggering the planting into two or three intervals spaced a couple weeks apart will result in that crop being harvestable over an extended time period rather than being ready to harvest all at once. This results in less waste from excess and a fresh supply of potatoes over a longer time period. It is also easier to manage, because a single crop need not all be harvested and processed at once.

**Harvest Timetable** For crops in North Yorkshire.

| plant | J | F | M | A | M | J | J | A | S | O | N | D | J2 | F2 | M2 | A2 | M2 | J2 | J2 | A2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| bean - broad | | | | | | ■ | ■ | ■ | | | | | | | | | | | | |
| bean - French | | | | | | | ■ | ■ | ■ | | | | | | | | | | | |
| bean - runner | | | | | | | | ■ | ■ | | | | | | | | | | | |
| beetroot | | | | | | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| broccoli - Calabrese | | | | | | | | ■ | ■ | ■ | ■ | | | | | | | | | |
| broccoli - sprouting | | | | | | | | | | | | | | ■ | ■ | ■ | ■ | | | |
| brussels sprouts | | | | | | | | | | ■ | ■ | ■ | ■ | ■ | | | | | | |
| cabbage - summer | | | | | | | | ■ | ■ | | | | | | | | | | | |
| cabbage - winter | | | | | | | | | | ■ | ■ | ■ | ■ | ■ | | | | | | |
| cabbage - spring | | | | | | | | | | | | | | ■ | ■ | ■ | | | | |
| carrot | | | | | | | ■ | ■ | ■ | ■ | ■ | | | | | | | | | |
| cauliflower - summer | | | | | | | | ■ | ■ | | | | | | | | | | | |
| chard | | | | | | | ■ | ■ | ■ | ■ | ■ | | | | | | | | | |
| courgette | | | | | | | ■ | ■ | ■ | | | | | | | | | | | |
| cucumber | | | | | | | | ■ | ■ | | | | | | | | | | | |
| garlic | | | | | | | | | | | | | | | | | | | | ■ |
| kale | | | | | | | | | | | | ■ | ■ | ■ | ■ | | | | | |

Detials based on the recorded experiences ofNorth Yorkshire allotment gardeners.

# Productive Focus Garden: Layout

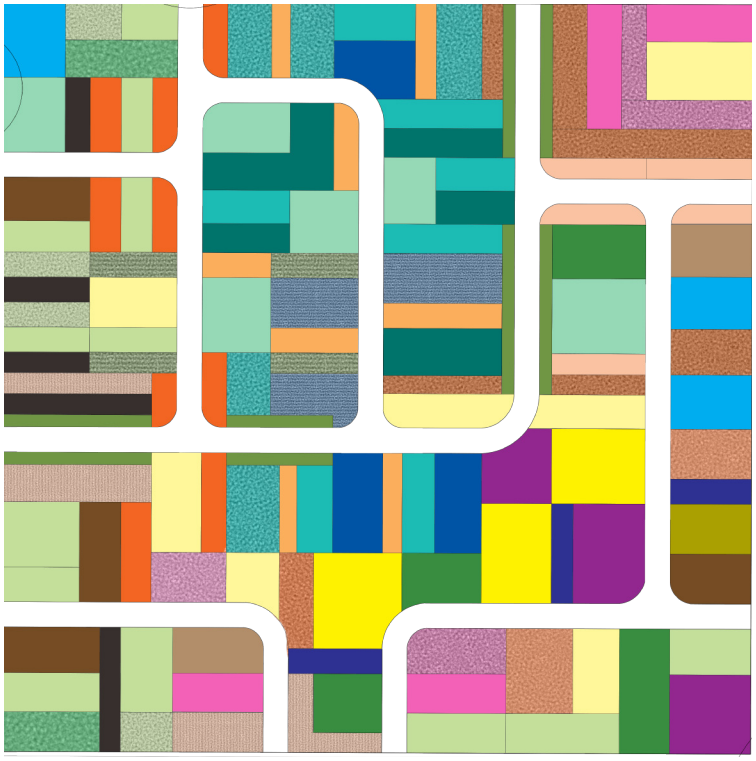
**Intention:** max production of edibles

Suggested division and assigned spaces for plants are based on companion planting principles, space needs, and aesthetic interest. Pathways are an appropriate width for wheelbarrow and are laid out for easy manouvering and access to garden beds. It is possible for gardeners to walk between rows and beds for further access.

> Growing more edible gardens in populated areas could be the solution to ensuring a dependable food supply.

## Design features

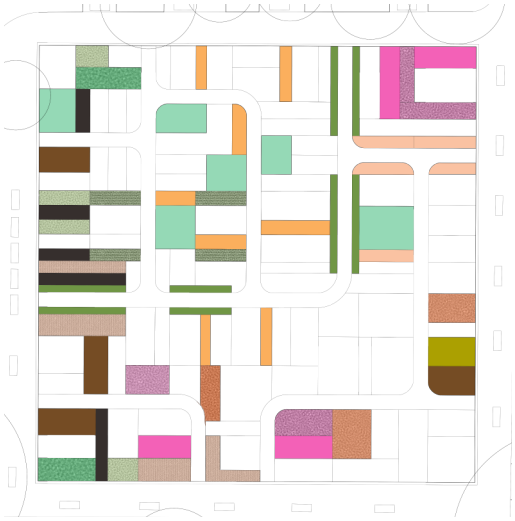
- Beds rectangular since many veg do well in rows; veg can be grown more densely with out hindering access (foot paths between rows and rectangular plots).
- Main paths 1.2 m (4 ft) to allow easy wheelbarrow maneuvering.
- Main paths divide bed spaces into manageable sections and create division between certain plant groups.
- Irregular bed sizes complement the variable space needs of plants and are adjustable - may be rotated or shifted by season.
- Companion planting implemented by grouping plants which benefit each other (for instance, marigolds planted with brassicas discourages cabbage flies).
- Planting calendar suggests staggered plantings of veg like carrot and cabbage to result in more continuous harvest.



# Productive Focus Garden: Planting Calendar

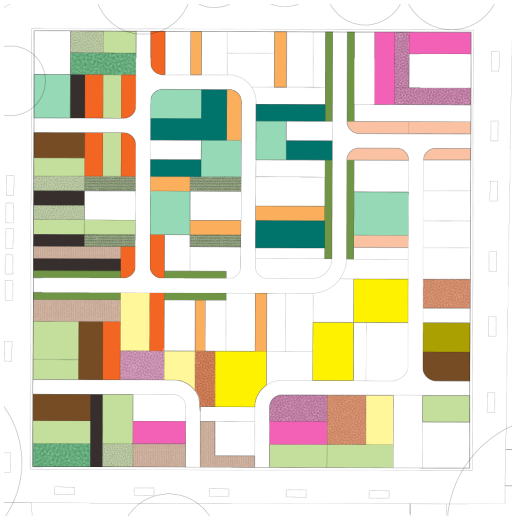
Planting and harvest times will be staggered in this garden for productivity.

March



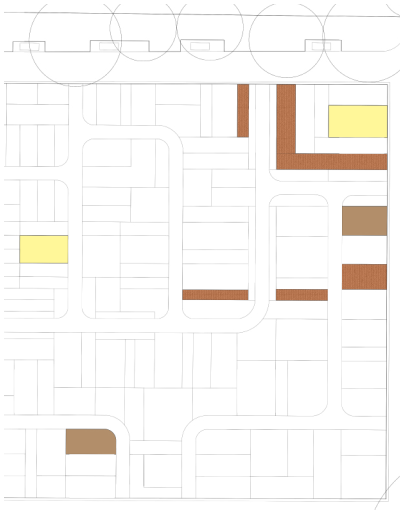
- beetroot
- marigold
- nasturtium
- onion - set
- onion - spring
- parsnip
- pea
- potato - early
- radish
- rocket
- spinach
- turnip - early

April



- brussels sprouts
- cabbage - summer
- carrot
- cauliflower
- leek
- lettuce
- potato - main crop

Note: Cabbage and turnip to be planted in July. Garlic to be planted in October.



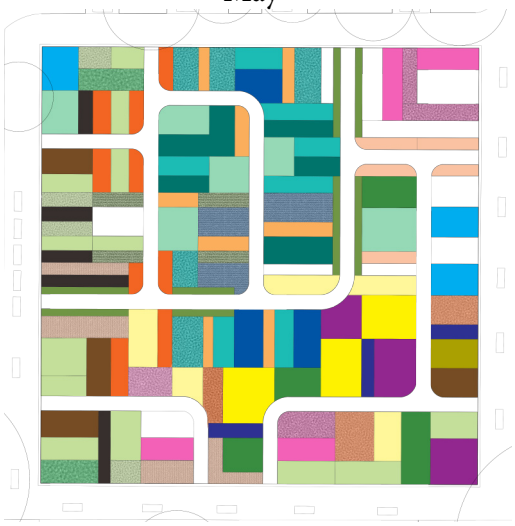
July

- cabbage - spring
- turnip - main crop

October

- garlic

May



- bean - pole
- brocolli
- cabbage - winter
- courgette
- cucumber
- kale
- squash
- swede
- sweetcorn

# Productive Focus Garden: Experience

The experience of this garden is based on the the productivity of it.

Visitors to the Productive Focus Garden will walk among plots of growing edible plants, experiencing the dimension of the different plant shapes and sizes, as well as their varied textures and colours. The walkways wind through the raised garden beds, wide enough for wheel barrows to be manouvered and garden work to be done.

Purple cauliflower, romanesco cauliflower, brocolli and spinach. Image from www.ediblegardensia.tumblr.com.

Throughout the planting seasons, areas of the Productive Focus Garden will be barren, as defined on the previous page. However, part of the beauty of a productive garden is that it is continually changing as vegetables are seeded, sprouting, maturing, fruiting, and waning.

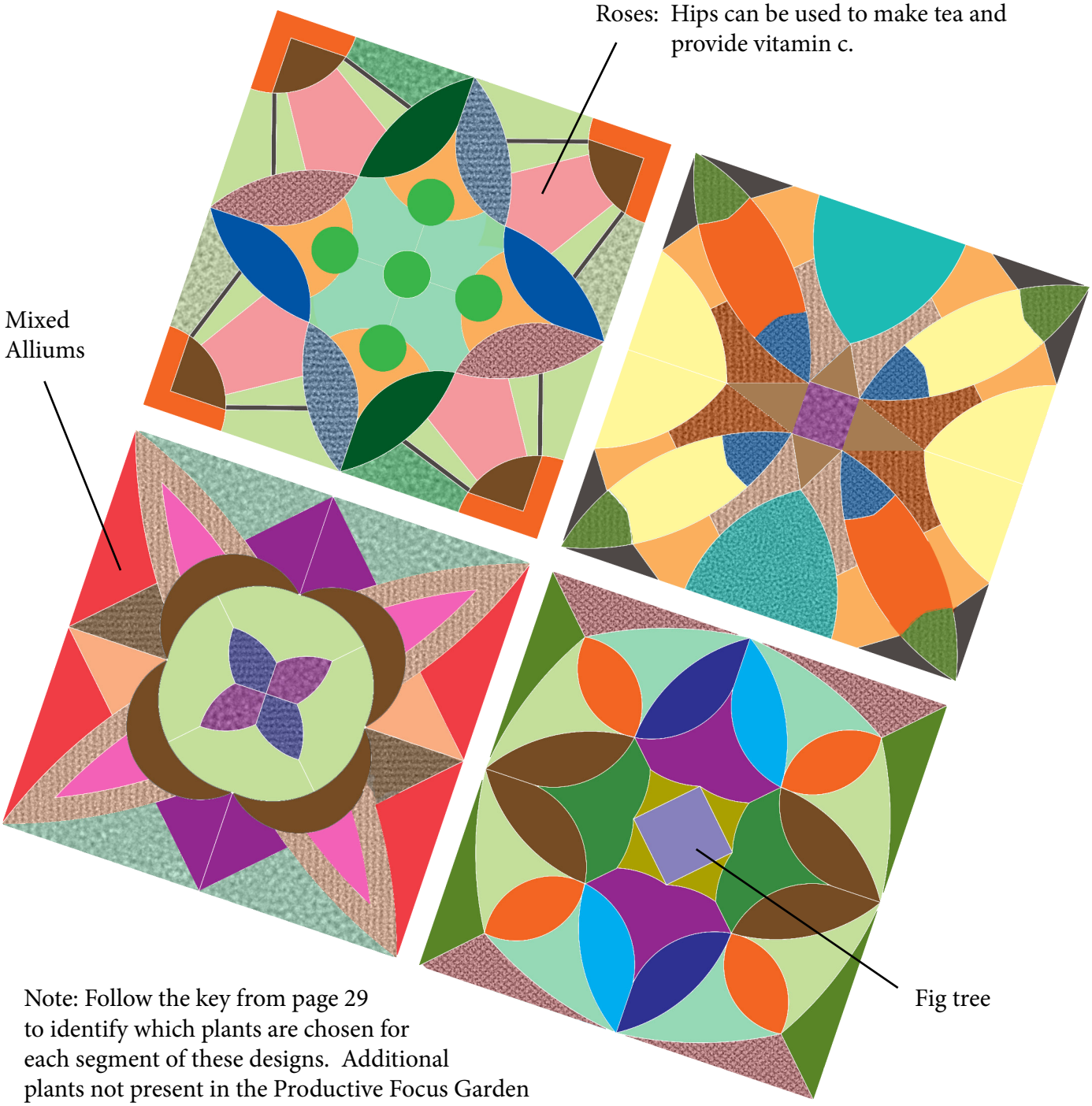
Another goal of this garden is for it to be as productive as possible. Therefore, the beds are intended to be maximized with intensive planting, meaning that plants are grown in close proximity to one another. Continual tending by volunteers will be needed to ensure that plants flourish and produce. This harvest will be shared among those who tend the garden and will also be openly available to the public. Signage to communicate when crops are ready to be harvested will be important to ensure the health of the garden and of people.

Lettuce, marigorld, parsley. Image from www.simplebites.net.

# Pleasure Focus Garden: Layout

**Intention:** an aesthetic garden for enjoyment

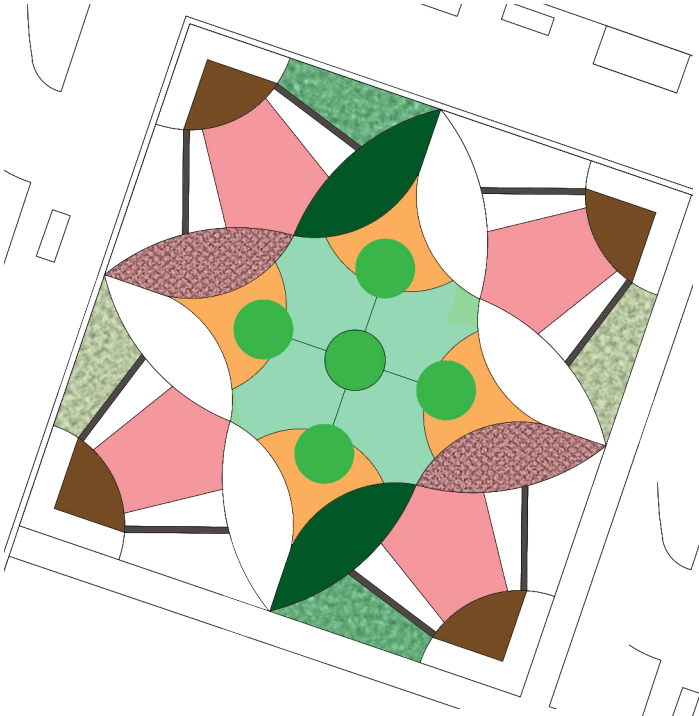
The goal of this garden is to display edible plants in an artistic format, using the model of Rennaissance parterre gardens. The displayed formats are intended for variety both visually and in harvest.




Note: Follow the key from page 29 to identify which plants are chosen for each segment of these designs. Additional plants not present in the Productive Focus Garden are called out here.

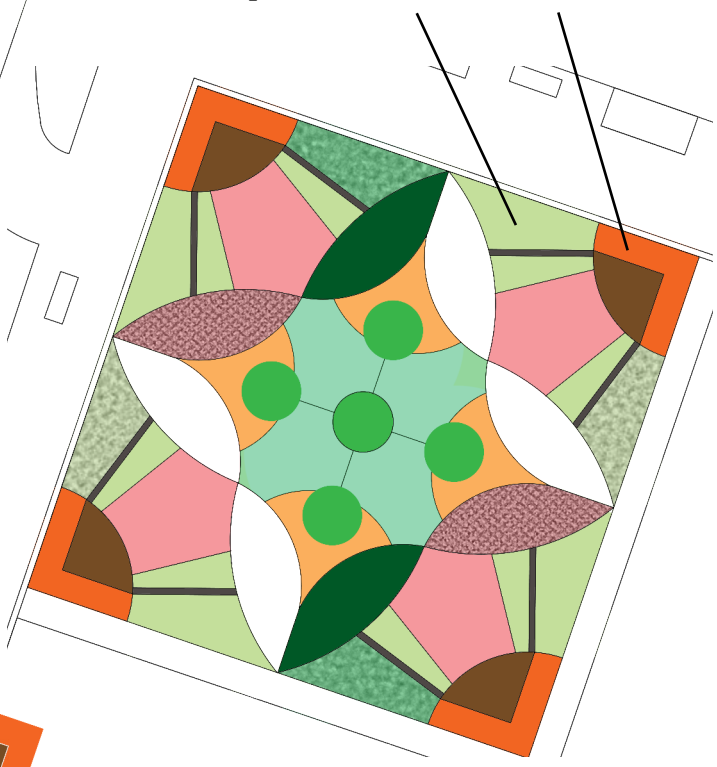
# Pleasure Focus Garden: Planting Calendar

Sequential planting spreads out plant maturity, creating more variety in garden structure as well as helping to stagger harvest times.

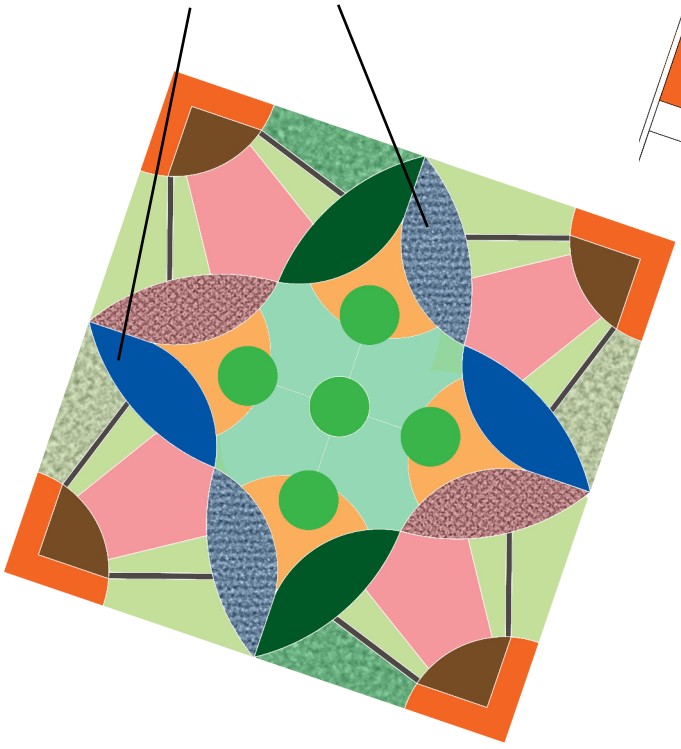


In March show beetroot, oregano, marjoram, spinach, rocket, radish, beans, marigold and early potatoes.

In April sow lettuce and carrot.



In May sow kale and swede.



Note: Plants are organized in the layout with taller plants towards the center of the design and lower growing plants towards the edges. This allows for visiility and access to harvest.

# Pleasure Focus Garden: Experience

The goal of this garden is to display edible plants in an artistic format, using the model of Rennaissance parterre gardens. The displayed formats are intended for variety both visually and in harvest.

Roses are integrated into this design to connect with the existing rose garden on site.

Edible plants are laid out in patterns as portrayed on the previous pages.

Poles are used to create structural form and to increase growing space.

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