

ALLOTMENTS FEASIBILITY STUDY

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INTRODUCTION

This document sets out minimum requirements which need to be met to achieve the goals described.

As with any undertaking involving infrastructure and people, it is impossible and foolish to impose strict parameters.

This study rates the quality of horticultural process as the predominant factor, because other outputs (e.g. therapeutic / occupational) derive from it.

The design concept is founded on human interaction with each element and the site as a whole.

The most critical factor for long-term success is Soil Fertility and ongoing Improvement. This is a precursor to any other development.

Access to water is also assumed to be a necessity.

ORGANIC

The term is not used in its commercial sense, but as a relative standard to make pragmatic judgements.

If the site can be successfully developed initially using organic materials and techniques, this will set an example of good practice which site users will be likely to follow.

The general expectation and aspiration is and will increasingly be that food growing should be completely organic.

THE SITE

1. Site Assessment – May 2006

STATION ROAD

CATCLIFFE & BRINSWORTH COMMUNITY PARTNERSHIP ALLOTMENT SITE

This site and its soils are in almost pristine condition, compared to other urban allotment sites.

Although industrial activity has been intense in the immediate vicinity for at least 250 years, the land appears agriculturally intact.

AREA: Approx. 75 x 100 Metres = 0.75 Hectares = 7,500 M² (< 2 Acres)
+ More than an acre around fenced site

CULTIVABLE: 90 % of available area = 0.7 Hectare = 7,000 m²

SHAPE: Tapering Rectangle established by security fencing
within larger Isosceles triangular area defined by road / rail / housing

ELEVATION: 130 – 160 Feet above Sea level

GRADIENTS:

East end, top, 1:10 North, 1:15 West, 1:20 South, horizontal
Lower third of site on flat / level ground.

ASPECT: South / South-West -facing gentle slope.
Warm sun-trap.

MICRO-CLIMATE: Protected from cold North wind by trees and wooded roadside verge. Lower ground is a potential frost-pocket

LIGHT EXPOSURE: Shade from tree-line at a premium, useful in hot summer.

LAYOUT: Preserve and enhance basic existing pattern

Potential to integrate pocket of land between rail tracks and other side of line of trees.

ACCESS to site via Station Road - quiet (8 houses + 2 centres)

Main Gate set back from road 10 m / 30 ft

Verges and Roundabout island mown grass

Main track required for vehicle access for bridge maintenance.

DRAINAGE

- Subsoil and Bedrock permeable (e.g. pond level low)
- Surface water can run off and collect along ditch / line of trees.
- Main drain and inspection ducts along south edge of site (drain old marshalling yard area.)

UTILITIES: Water supply tap identified. Presume there is sufficient pressure to deliver water up slope.

INFRASTRUCTURE:

- Modern security Fencing and Gate with Padlock (currently breached at N, S & SE corner permitting entry)
- Main limestone chipping and crushed brick track-ways along and up site sufficient for works access and infrastructure installation.
- Hardcore area inside gate suitable site for shelter / meeting room.

EXISTING USE:

- One plot occupied, defined by inner fence, featuring Pond & 6 Fruit trees
- One building extant (Marine Ply-board covered in Roofing Felt, raised on Brick plinths)
- Roofing Materials from demolished building lying on surface.

EXISTING PLANTING:

- Retain majority of Sapling hedge (Birch / Alder / Willow) for summer shade.
- Possible to "lift" (cut lower branches) or "layer" (bend to horizontal)
- Extend and enhance woodland verge by road A630 (for nature value and screening for noise reduction)
- Remove coppiced Sycamore from centre. Grub out roots.

REMNANT SPECIES:

- Predominant covering of Couch grass indicating more than 5 years disuse
- Patches of Nettles and Bramble suggest disturbance and / or leftover fertility
- Occasional Thistle and Buddleia indicate Alkalinity
- Docks suggest recent cultivation (3-5 years) and Potash deposit
- Specimens of Comfrey / Tansy and Horseradish are extant as survivors of previous cultivation.

WILDLIFE ASESMENT

As a relatively clear and undeveloped site, current wildlife value is minimal. Areas of established and maturing trees and woodland around 3 sides of the site (North / West / South) provide a green corridor and potential nesting sites for birds.

Presence of Snails (as well as Slugs) indicate presence of Lime / alkaline conditions.

GEOLOGY: Carboniferous

SOIL:

1. Indigenous or original soil profile has been retained at the top edge of the site. This is thinner (8-10" / 20 cm deep) deposit of less workable CLAY.

Most suitable for perennial plantings.

- Some small patches have been cleared for cultivation more recently as evidenced by small heaps of weeds (stacks of Loam).
- Soil Worms are present in good numbers, indicating settled non-cultivation and presence of medium levels of organic matter (5%).

2. Main area has been historically amended to create a deep (18-24 " / 50+ cm) SILTY LOAM. This should be highly workable and consistently fertile. This improvement may have been achieved by the importation of river / canal dredgings. Area 3 has been further improved by cultivation and manuring by pigs.

SUBSOILS:

Natural profile is Clay overlaying sandstone.

The lower half of the site has been covered with imported topsoil to a depth of up to 50 cm.

The area between the hedge and the railway track is a mound of limestone chippings, similar to the material used on the railway. Mound is covered by turf growth, but the topsoil is insignificant (less than 10 cm).

SUB-SOIL CONTAMINATION:

The site has been used as a temporary dump for concrete and building rubble. Remnants of these materials may be hidden below the soil surface.

Before the drainage pipe was constructed to remove runoff from the Railway Marshalling Yard, chemical effluent including diesel fuel ran down a stream to the river and would have contaminated the soil and subsoil. This would explain why the area behind the trees has been capped with limestone chippings several feet deep.

RISK ASSESSMENT

1. CONTAMINATION:

- Minor litter at soil surface, consisting of inert substances such as stone / corrugated sheeting. Requires further site inspection and careful clearance before cultivation.
- Tyres burnt on 6 m² area inside fenced compound. Cleared by tenant.
- Almost total absence of Clinker or Coal ashes.
- Minimal presence of broken glass.
- The noxious or toxic detritus typically found on old allotment sites is absent.

2. VANDALISM

- Although the site is not fully secure and there is evidence of encroachment, the one existing wooden building has not (yet) been burnt down. This structure has been used by local youths and actually decorated with an artistic spray-paint mural, dated 2005.
- A recent brush-fire has burnt several trees.
- Bollards prevent vehicle access to open space between site and housing.

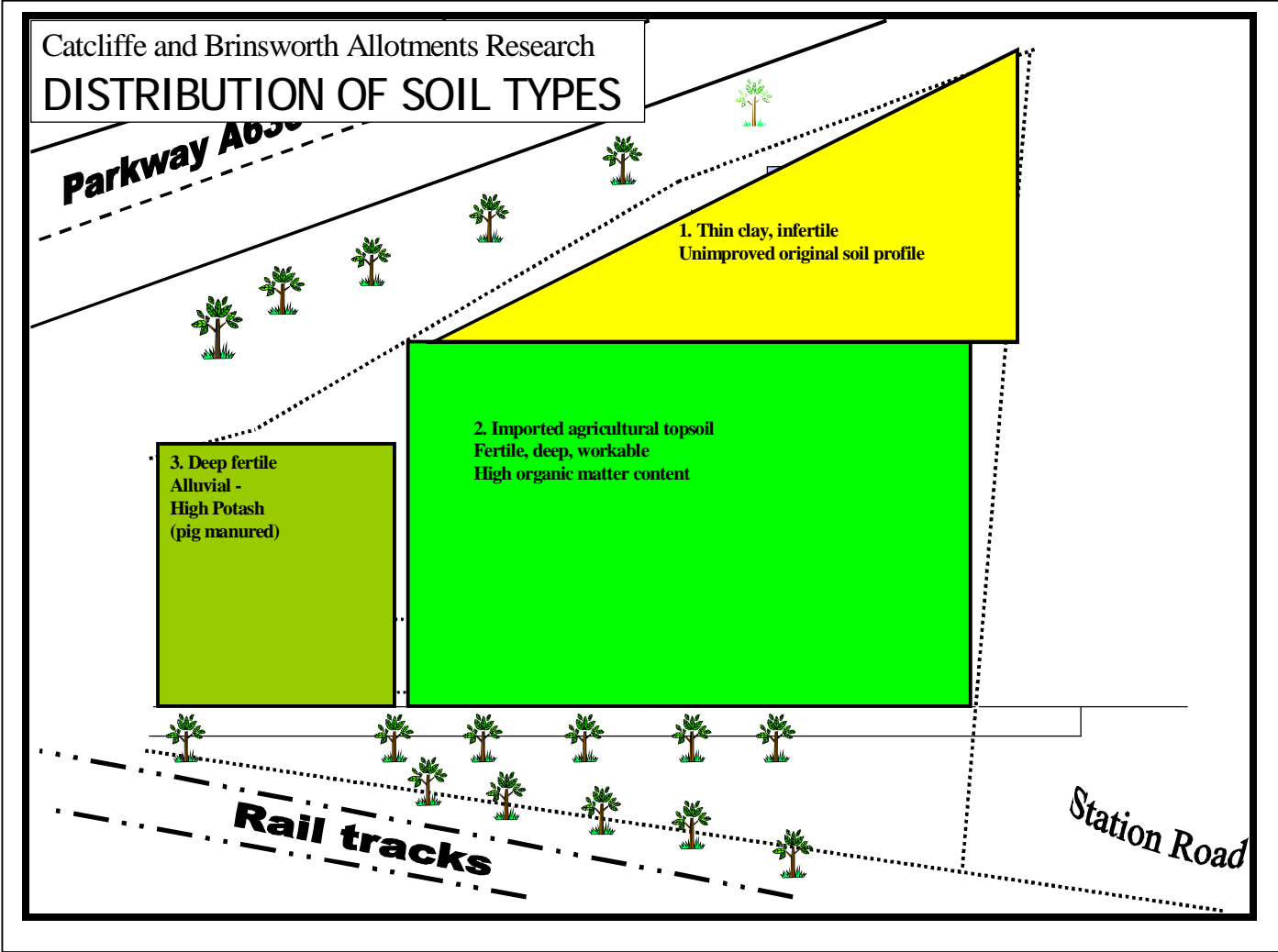
3. INFRASTRUCTURE

- Drain Inspection Ducts by railway: uncovered, 2.5 – 3 m deep. Outside the fenced site.
- Pond. Water level less than 1 metre. Fenced off. Could be retained as private facility with some access and improved as an asset for the site.

4. LOCAL FACTORS

- Proximity to A630 Trunk Road.
Safe distance from roadside airborne pollution for cultivation = 100m.
Top fence approximately 50 m from main road.
Clumps of bushy trees act as filters to reduce pollution, rendering the site sufficiently safe.
- Noise Pollution. Incessant road noise can be ignored or forgotten.
Some people may need locating in quietest spots e.g. hearing aid users.
- Noise Pollution from Airport takeoff and landing. The majority of flights seem to be small, light aircraft which are relatively quiet.

2. Soil Analysis and Distribution





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SOIL ANALYSIS RESULTS

Head of Advisory Services: Mark Meares

Name : RICHARD CLARE

Address : SOIL SAMPLES

Date of Report : 16-JUN-2006

Report Number : 18074

Field Name	1 TOP	2 BOTTOM
Sample Number	118659	118660
Clay Content (% w/w)	33	28
Soil Type	Medium	Medium
Organic Matter (% w/w)	4.1	5.0
Acceptable Level	3.0%	3.0%
This sample is	OK	OK
Calcium Content (mg/kg)	2217	8401
Optimum Level	2000-8000	2000-8000
This sample is	OK	High
pH value - in Water	6.1	7.1
- in KCl	5.7	6.7
Optimum pH (Water)		
Potatoes, Oats, Rye	5.5 - 6.0	5.5 - 6.0
Total CaO required (t/ha)	0	0
Recommended Addition (t/ha/yr)	0	0
Grassland	6.0 - 6.5	6.0 - 6.5
Total CaO required (t/ha)	0	0
Recommended Addition (t/ha/yr)	0	0
Wheat, Beans, Brassicas	6.3 - 7.0	6.3 - 7.0
Total CaO required (t/ha)	1.6	0
Recommended Addition (t/ha/yr)	1.6	0
Peas, Barley, Lucerne	6.5 - 7.5	6.5 - 7.5
Total CaO required (t/ha)	3.6	0
Recommended Addition (t/ha/yr)	2.0	0
Phosphorus (mg/kg) (Sodium Acetate)	2.1	33.7
(Double Lactate) (DL)	10.5	214.3
(Citric Reserve)	82.7	628.2
(Olsen Alkali) (O)		
Arable and Grassland		
Optimum Level (DL or O)	100 - 350	100 - 350
Total P2O5 required (kg/ha)	537	0
Recommended Addition (kg/ha/yr)	180	0
Horticultural		
Optimum Level (DL or O)	200 - 500	200 - 500
Total P2O5 required (kg/ha)	1137	0
Recommended Addition (kg/ha/yr)	180	0

SOIL ANALYSIS RESULTS

Name : RICHARD CLARE

Date of Report : 16-JUN 2006

Address : SOIL SAMPLES

Report Number : 18074

Field Name	TOP	BOTTOM
Sample Number	118659	118660
Potash (Double Lactate) (mg/kg)	100.6	316.5
Acceptable Level		
Arable and Grassland	140 - 250	140 - 250
This sample is	Low	Normal
Acceptable Level		
Horticultural and Lucerne	160 - 350	160 - 350
This sample is	Low	Normal
Magnesium (Double Lactate) (mg/kg)	174.1	381.4
Arable and Grassland		
Optimum Level	40	40
Total MgO required (kg/ha)	0	0
Recommended Addition (kg/ha/yr)	0	0
Horticultural and Roots		
Optimum Level	80	80
Total MgO required (kg/ha)	0	0
Recommended Addition (kg/ha/yr)	0	0
Trace Elements		
Iron (mg/kg)	406	47
This sample is	High	Normal
Manganese (mg/kg)	135.3	278.2
This sample is	High	Normal
Zinc (mg/kg)	13.8	124.6
This sample is	Normal	Normal
Copper (mg/kg)	10.2	11.1
This sample is	High	Normal

SOIL ANALYSIS RESULTS

Name : RICHARD CLARE
Address : SOIL SAMPLES

Date of Report : 16-JUN-2006

Report Number : 18074

Field Name : 1 TOP
Sample Number : 118659

Soil Type

This soil has a clay content of 33% which gives it a medium texture. Medium soils will be intermediate in nature but, to maintain good structure and aeration, it will be particularly important to develop biological activity.

Ideally the level of organic matter for this soil texture should be greater than 3.0%. The levels of organic matter in this soil are adequate. This should help to retain moisture and plant nutrients.

Calcium and pH (Lime requirement)

The calcium levels are adequate in this soil. This should help to promote the biological activity within the soil.

Potatoes, Oats, Rye - The pH measured in this soil is satisfactory and no lime is required.

Grassland - The pH measured in this soil is satisfactory and no lime is required.

Wheat, Beans, Brassicas - The pH measured in this soil is low and lime is required to raise the pH to a suitable level. Apply the equivalent of 1.6 t/ha CaO.

Peas, Barley, Lucerne - The pH measured in this soil is low and lime is required to raise the pH to a suitable level. Apply the equivalent of 2.0 t/ha CaO.

Potential sources of calcium for raising pH values are chalk, limestone, magnesium limestone (Dolomitic) or calcified seaweed. The efficiency of your chosen liming material can be assessed from its quoted neutralising value or CaO equivalent (neutralising value of CaO = 100%). Excessive applications should be avoided, where necessary use split dressings and plough down the first application. Finely ground products have a faster action.

Phosphorus

For arable and grassland soils the levels of phosphorus are low in the available form in this field. Therefore, an application of rock phosphate is recommended to provide 537 kg/ha P₂O₅. However, the maximum recommended application rate is 180 kg/ha P₂O₅. Assuming the product used has a P₂O₅ content of 30% the application rate would be 600 kg/ha. The remainder can be applied in subsequent years.

For horticultural soils the levels of phosphorus are low in the available form in this field. Therefore, an application of rock phosphate is recommended to provide 1137 kg/ha P₂O₅. However, the maximum recommended application rate is 180 kg/ha P₂O₅. Assuming the product used has a P₂O₅ content of 30% the application rate would be 600 kg/ha. The remainder can be applied in subsequent years.

Note : Rock phosphate should not be applied within 4 months of liming. Avoid grazing the land receiving rock fertilisers until all the material has been washed off the leaves.

Potassium

For horticultural soils, the potassium levels are marginally low in this field. It may be necessary to review the cutting regimes and the manure spreading systems to maximise the nutrient recycling to balance the potassium offtake in the crops against the returns in the manures and composts.

Magnesium

For arable and grassland soils the levels of magnesium are satisfactory in the available form in this field.

For horticultural soils the levels of magnesium are satisfactory in the available form in this field.

Trace Elements

The high manganese may indicate compaction. This may be corrected by appropriate cultivations or the use of deep rooting green manures.

SOIL ANALYSIS RESULTS

Name : RICHARD CLARE

Date of Report : 16-JUN-2006

Address : SOIL SAMPLES

Report Number : 18074

Field Name : 1 TOP

Sample Number : 118659

The high iron may indicate water logging. This may be corrected by appropriate cultivations or the use of deep rooting green manures.

The high copper levels may reflect either poor aeration or past cropping or manuring history. These levels are not serious but you should avoid using conventional pig and poultry manures as these often contain high amounts of copper.

Comments

The balance between the different phosphorus fractions indicate that the biological activity of this soil is out of balance and attention should be given to improving the soil structure and pH, which in turn will enhance the biological activity and enable micro nutrients to be made available and help to improve soil aeration and drainage.

SOIL ANALYSIS RESULTS

Name : RICHARD CLARE

Date of Report : 16-JUN-2006

Address : SOIL SAMPLES

Report Number : 18074

Field Name : 2 BOTTOM

Sample Number : 118660

Soil Type

This soil has a clay content of 28% which gives it a medium texture. Medium soils will be intermediate in nature but, to maintain good structure and aeration, it will be particularly important to develop biological activity.

Ideally the level of organic matter for this soil texture should be greater than 3.0%. The levels of organic matter in this soil are adequate. This should help to retain moisture and plant nutrients.

Calcium and pH (Lime requirement)

The calcium levels are high in this soil. This will limit the biological activity within the soil and possibly lock up some micro nutrients.

Potatoes, Oats, Rye - The pH measured in this soil is satisfactory and no lime is required.

Grassland - The pH measured in this soil is satisfactory and no lime is required.

Wheat, Beans, Brassicas - The pH measured in this soil is satisfactory and no lime is required.

Peas, Barley, Lucerne - The pH measured in this soil is satisfactory and no lime is required.

Phosphorus

For arable and grassland soils the levels of phosphorus are satisfactory in the available form in this field. Therefore, no application of a phosphate fertiliser is required.

For horticultural soils the levels of phosphorus are satisfactory in the available form in this field. Therefore, no application of a phosphate fertiliser is required.

Potassium

For horticultural soils, the potassium levels are good in this field. It is important to maintain the potassium status by using farmyard manures or composts to balance the nutrients being removed from the field.

Magnesium

For arable and grassland soils the levels of magnesium are satisfactory in the available form in this field.

For horticultural soils the levels of magnesium are satisfactory in the available form in this field.

Trace Elements

There are no serious trace element problems.

Comments

The balance between the different phosphorus fractions indicate that the biological activity of this soil is out of balance and attention should be given to improving the soil structure and pH, which in turn will enhance the biological activity and enable micro nutrients to be made available and help to improve soil aeration and drainage.

Soil tests carried out by professor Jonathan Leake – Sheffield University
Department of Plant and Animal Science.

Sample JRL 1 refers to soil type area 2 on Distribution map.
Sample JRL 2 refers to soil type area 1.

Richard

		Dried sample		moisture content	Extraction sample	
		Fwt (g)	Dwt (g)		fwt (g)	calculated dwt (g)
JRL	JRL1	3.017	2.343	0.223401	3.025	2.349213
samples	JRL2	2.999	2.295	0.234745	3.002	2.297296

	TON mg/L	NH3 mg/L	sample dwt (g)
JRL1	4.628	0.239833	2.349213
JRL2	3.988	0.046833	2.297296

	TON mg	Ammonia mg	(per 30ml sample)
JRL1	0.13884	0.007195	
JRL2	0.11964	0.001405	

	TON mg g ⁻¹ dwt soil	Ammonia mg g ⁻¹ dwt soil
JRL1	0.059101	0.003063
JRL2	0.052079	0.000612

	TON μg g ⁻¹ dwt soil	Ammonia μg g ⁻¹ dwt soil
JRL1	59.10065	3.062728
JRL2	52.07862	0.611589

2M KCl

Extraction performed on fresh sample - concentration in soil calculated on dry weight basis - parallel samples analysed for moisture content correction.

Total available Nitrogen (TON)
= NO₃ + NO₂

I expect most is NO₃.

Conclusions - Good plants to be Nitrogen Supply

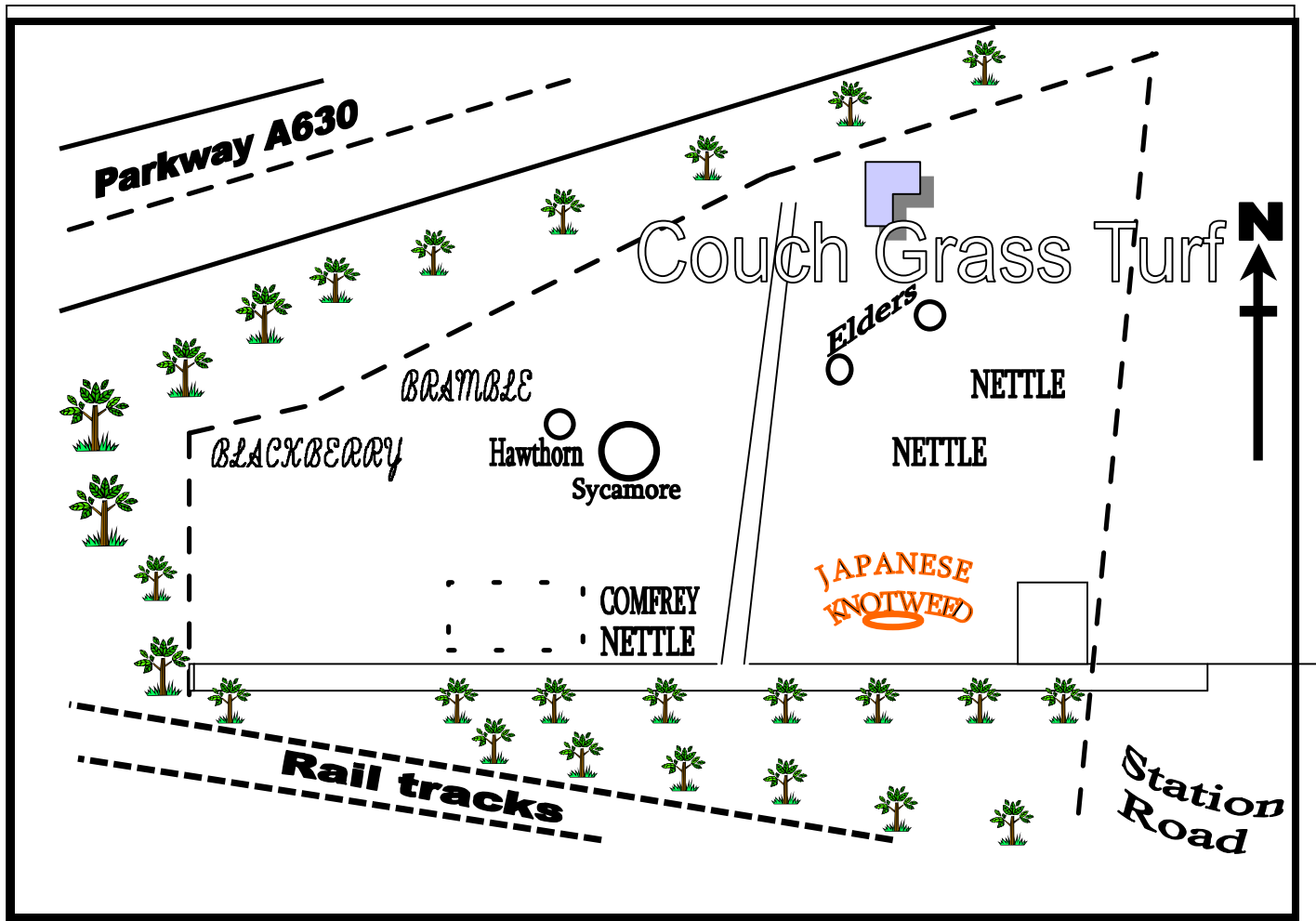
3. SPECIES LIST - Flowering Plants

Common Name	Botanical Name
1. Elder	<i>Sambucus niger</i>
2. Hawthorn	<i>Crataegus monogyna</i>
3. Wild Cherry	<i>Prunus avium</i>
4. Alder	<i>Alnus glutinosa</i>
5. Silver Birch	<i>Betula pendula</i>
6. Mountain Ash	<i>Sorbus aucuparia</i>
7. Goat Willow	<i>Salix caprea</i>
8. Sycamore	<i>Acer pseudoplatanus</i>
9. Laburnum	<i>Laburnum anagyroides</i>
10. Apple	<i>Malus sylvestris</i>
11. Cherry	<i>Prunus species</i>
12. Plum	<i>Prunus domestica</i>
13. Pear	<i>Pyrus communis</i>
14. Hazel	<i>Coryllus avellana</i>
15. Hornbeam	<i>Carpinus betulis</i>
16. Broom	<i>Sytisus scoparius</i>
17. Gorse	<i>Ulex europeus</i>
18. Lilac	<i>Syringa vulgaris</i>
19. Holly	<i>Ilex aquifolium</i>
20. Honeysuckle	<i>Lonicera periclymenum</i>
21. Blackcurrant	<i>Ribes nigrum</i>
22. Raspberry	<i>Rubus ideaus</i>
23. Bramble	<i>Rubus fruticosus</i>
24. Couch Grass	<i>Eltrigia repens</i>
25. Meadow Foxtail	<i>Alopecurus pratensis</i>
26. Greater Periwinkle	<i>Vinca major</i>
27. Dandelion	<i>Taraxacum officinale</i>
28. Nettle	<i>Urtica dioica</i>
29. Greater Plantain	<i>Plantago major</i>
30. Broad-leaved Dock	<i>Rumex obtusifolius</i>
31. Rosebay Willowherb	<i>Chamerion angustifolium</i>

32. Greater Willowherb	<i>Epilobium hirsutum</i>
33. Ragwort	<i>Senecio jacobia</i>
34. Hogweed	<i>Heracleum sphondylium</i>
35. Bladder Campion	<i>Silene vulgaris</i>
36. Common Knapweed	<i>Centaurea nigra</i>
37. Wormwood	<i>Artemesia absinthum</i>
38. Mugwort	<i>Artemesia vulgaris</i>
39. Cow Parsley	<i>Anthriscus sylvestris</i>
40. Bush Vetch	<i>Vicia sepium</i>
41. Meadow Vetchling	<i>Lathyrus pratensis</i>
42. White Clover	<i>Trifolium repens</i>
43. Red Clover	<i>Trifolium pratense</i>
44. Black Medick	<i>Trifolium nigra</i>
45. Red Dead Nettle	<i>Lamium purpureum</i>
46. White Dead Nettle	<i>Lamium album</i>
47. Forget-me-not	<i>Myosotis arvensis</i>
48. Daisy	<i>Bellis perennis</i>
49. Creeping Buttercup	<i>Ranunculus acris</i>
50. Lady's Mantle	<i>Alchemilla vulgaris</i>
51. Cut-leaved Cranesbill	<i>Geranium dissectum</i>
52. Spear Thistle	<i>Cirsium vulgare</i>
53. Creeping Thistle	<i>Cirsium arvense</i>
54. Hedge Woundwort	<i>Stachys silvatica</i>
55. Comfrey	<i>Symphytum officinale</i>
56. Tansy	<i>Tanacetum vulgare</i>
57. Hoseradish	<i>Armoracia rusticana</i>
58. Teasel	<i>Dipsacus fallonum</i>
59. Coltsfoot	<i>Tussilago farfara</i>
60. St John's Wort	<i>Hypericum perforatum</i>
61. Japanese Knotweed	<i>Fallopia japonica</i>

Catcliffe and Brinsworth Allotments Research

DISTRIBUTION OF WEED SPECIES



DEVELOPMENT

1. EXPLANATION OF DEVELOPMENT PLANS

RURAL IMPRESSION

By contrast with the urban setting and structure of the allotments in Brinsworth, the Catcliffe site offers the chance to develop a much more rural impression, with larger plots and a more open feel.

OPEN VIEW across site

Historically, many established allotment sites have been so intensively developed that they appear as “shanty towns” to the objective observer. This evolves as the result of each private individual building their own small sheds and greenhouses, with the odd fruit tree and hedges dividing each plot. Whilst not criticising this pattern, since it represents the commitment of many individuals, the aim at Catcliffe would be to try to design out this tendency by providing **shared facilities** (fruit, storage, shelter and protected growing space).

The benefits of maintaining this open impression across the site would be:-

- Security. If all parts of site are visible, users will feel and be more secure.
- Contacts and connections. Site users will be more likely to communicate with each other on an open site.

Amenity and Wildlife Value of Areas of Indigenous Vegetation.

Areas at the top of the site will initially be left uncultivated and maintained as turf for amenity use. If demand for space necessitated, these areas could be improved and cultivated. The strip of land down the slope, by the fence would be suitable for further infrastructure development.

However, they would

- retain the natural range of species extant on the site and
- provide a reserve of natural predators and pest control.
- If the fertility from these areas is removed, a wider range of species will have a chance to establish.
- If this is achieved by taking a cut of hay before midsummer, a second flush of later-growing species will have a chance to compete.

THE PSYCHOLOGY OF SECURITY.

The metal fencing around the site effectively **defines** the site. It was meant to completely exclude intruders and therefore reduce the threat of vandalism. As a statement to the outside world, it says "**Keep out!**". However, this could be interpreted as a **challenge** to some.

The fencing has been breached in at least three places. This can be understood to indicate the local population's desire to access and cross the site. Attempts to reinforce the fence to exclude intruders are likely to antagonise them and stimulate further breaches.

Even with the current breaches, the fence does effectively dissuade children from entering the site.

I would recommend leaving this situation as it is initially. Once the site is operational, the tenants may feel the need to secure the site more effectively. However, real security for the site will only be achieved by the **presence on site** of sufficient tenants and by the **acceptance and goodwill** of the local population.

If the site is considered as part of local **park provision**, then access for walkers and dog-walkers may actually be desirable. The breaches could be upgraded by providing small gates. This would create a more open site, which may seem more vulnerable, but could actually enhance security.

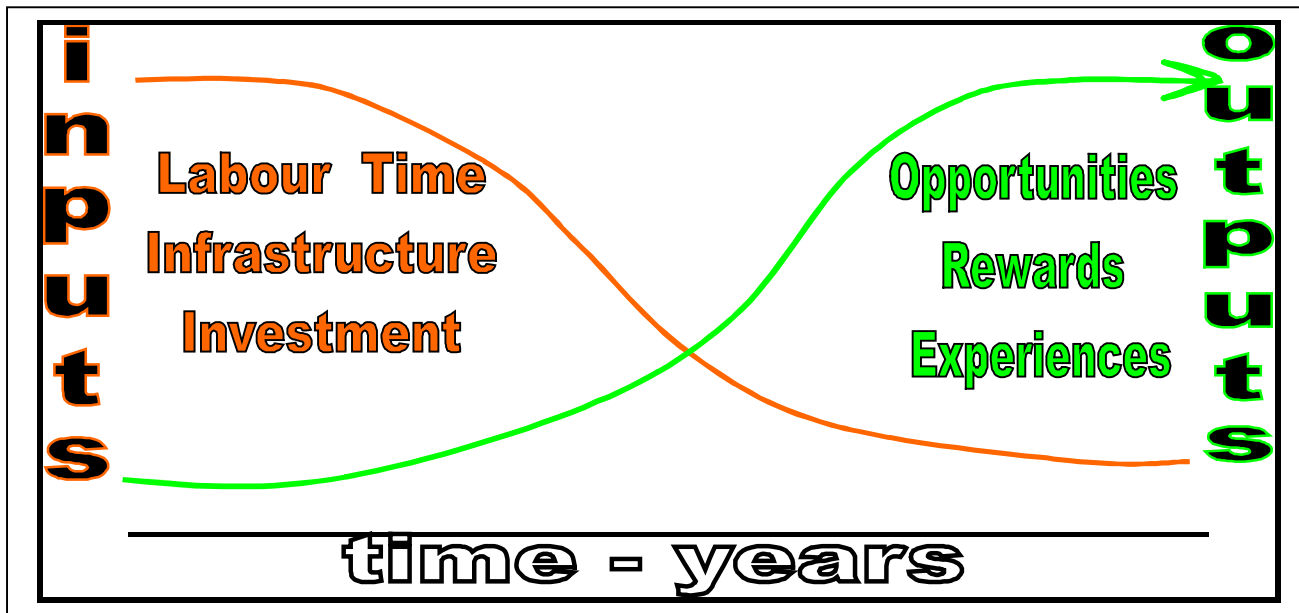
Practically, the fencing provides an opportunity to act as a support for climbing plants.

FROM AGRICULTURE TO HORTICULTURE

The site is currently established for agricultural, field-scale production. New allotment tenants can struggle, often for many years, to improve the physical and biological capacity of the soil. Unimproved soil restricts the range of crops possible and the ease with which they can be grown.

Development should provide the infrastructure and soil improvement to upgrade the site for more intensive horticultural use. This would in turn facilitate more social and therapeutic value.

GRAPH REPRESENTING OPTIMAL INVESTMENT STRATEGY.



Soil amendment:-

1. Weed-free (scrape off turf / plough / harrow)
2. Distribute concentrated fertilisers and bulky organic matter.
3. Green Manure (Rye and/or Field Beans)

Requirements

1. Bulky Organic Matter (= Manure / Compost / Leaf mould)
(Mature and homogenous matter which has been stored and processed will be more effective than raw or immature materials, which should be stacked and turned before adding to the soil.)
2. Concentrated Fertilisers
3. Green Manures

MATERIAL	Per Square Metre	Whole Site
1. Bulky Organic Matter	10 Kg	70 Tonnes
2. Concentrated Fertilisers	3 Kg	15 Tonnes
3. Green Manures	100 g	750 Kg

Nutritional Growing

Substances such as Seaweed and Volcanic Rock Dust, which supply a diverse range of minerals and trace elements, provide a guarantee that foods produced will be nutritionally sound and complete. This will avoid nutrient deficiencies and means that plants are more likely to resist pests and diseases. Produce will be more nutritionally complete and have more health-giving properties.

PHYSICAL TEXTURE

Simply by separating lumps of soil, organic matter creates an improved physical structure, which is easier to cultivate.

Liming also improves texture by breaking up clay into a finer consistency (flocculation)

PLOT DEFINITION – Terracing main areas with Raised Beds

Major soil improvement will be required to improve Allotment Tenants' chances of success in growing. This process can take several years for inexperienced growers who do not understand the necessity of a high organic matter content in the soil.

CULTIVATION SEQUENCE

- 1) Scrape with bucket – Mound Loamstacks at edges / uphill (squash?)
- 2) Plough along contour
- 3) Add organic matter and plough in
- 4) Distribute Concentrated Fertilisers – Lime / Rock Dust / Seaweed
- 5) Harrow to seed bed tilth
- 6) Sow Green Manures (Aug / Nov / Mar)

- 7) Cut flat paths along contour
- 8) Establish paths with flagstones
- 9) Install Sleepers
- 10) Turn Loam
- 11) Disc Green Manures to wilt
- 12) Incorporate - Plough or Spader / Rotavator

POPULATING THE SITE

It should be noted and acknowledged that potentially the most valuable output from the site will be the time input by individual plot-holders, possibly hundreds of hours a year each, and the community spirit which might emerge.

SCALE

Any demonstration should be relevant to the individual's scale of production and the time available. Techniques should be appropriate for small to medium-scale production.

TWO-PHASE STRATEGY.

Instead of completing the whole site in a single phase of development, certain areas and elements could be postponed. Terraced Bed Area 2 could be left to grow fertility-building crops until demand for plots expands. This would give ownership of the next phases to the site users.

It is quite possible that demand to take on plots will only increase when potential plot-holders can see the site working effectively. This is the rationale for setting up one or more demonstration plots in the first year and providing material support to new plot-holders in the form of seeds and seedlings.

Established usage and increasing demand for plots and will justify further investments in more poly-tunnels and upgrading other facilities.

Estimated Costings

SITE DEVELOPMENT		
Materials and Items + Options	Labour	£
Preliminary Clearance and Disposal of Waste		1000
Soil Improvement		
	Soil Cultivation	
Terraced Bed Edging Timber x 1.5 km		
Access Beds – New Sleepers x 150		3,000
	- Installation (including digger hire)	
Polytunnel		
Secure Store – Shipping Container (delivered)		1,400
Shelter		
Water Pipe and Taps		
	- Installation	
Fruit Stock		
	- Planting	
Horticultural Supplies		
Site Development Co-ordinator (6 months f.t.e.)		10,000
Horticultural Support Worker(s) (12 months f.t.e.)		20,000

Subscription scheme...

Skills audit – Who has experience /skills / trade / contacts

Preference manual labour for clearing surface / removing deep-root weeds

Sourcing Materials

Farms / Waste Recycling Contractors / Landscape Gardeners /

Canal Dredgings

Bulk / Large-scale supplies / providers + alternatives / options

- Fertilisers / Fruit / Seed / Sleepers / Paths / Poly / Building / Compostables

Labour – Rugby Clubs / Prisons / Probation / Territorials ?

Site Elements:

- ü Fencing / Gate (numbered padlocks)
- ü Track and path Access - surfacing
- ü Individual Plots – flat, angled terraces down slope
 - + water storage / store / patio / path / bed edge = seating
- ü Communal fruit areas – soft fruit patch + mixed edge
- ü Site Centre Building – Shelter / Washing / Catering
- ü Outdoor meeting space + Perennial Herb beds
- ü Access beds / Demonstration plots– shared / needs
- ü Store / Lockup / Metal lockers + keys?
- ü Communal Polytunnel – for early raising / cropping / warm crops
- ü Composting area
- ü Seating and Shelter areas
- ü Latrine?

2. PLANTING RECOMMENDATIONS

Pioneer crops on a newly improved soil:

1. **Vegetative-propagation** Potato / Onion sets / Strawberry / Rhubarb
2. **Seedlings / Transplants** Cabbage / Leeks
3. **Large Seeds** Beans / Squash

Year 2

If tenants have effectively cultivated their soils in year 1, their soil will be able to support any crop.

Direct-sown root crops – e.g Carrot / Beetroot / Parsnip

Sensory planting on raised beds in Meeting area

- Culinary and medicinal herbs – Perennials, Biennials and Annuals
- Fragrant and colourful Cottage Garden / Potager

Easy Access Beds

One crop per bed, edged with companion herbs and flowers.

Polytunnel

Winter Salads and early crops

Raise seedlings to transplant outdoors

Heat-loving Summer crops – Tomatoes / Cucumbers / Peppers / Aubergines

FRUIT

Because they take so long to mature, perennial fruit should be established at the earliest possible point. They must be planted in the dormant season (i.e. Winter – October to March).

Greater diversity of types and varieties will generate most interest and returns in the long term. The site presents an opportunity to establish 100 different types, which will develop into a real asset and feature.

Sponsorship

Fruit planting will present an opportunity for local peoples, group and even corporate sponsors to establish a connection with the site. This could take the form of planting ceremonies and/or producing plaques naming each tree.

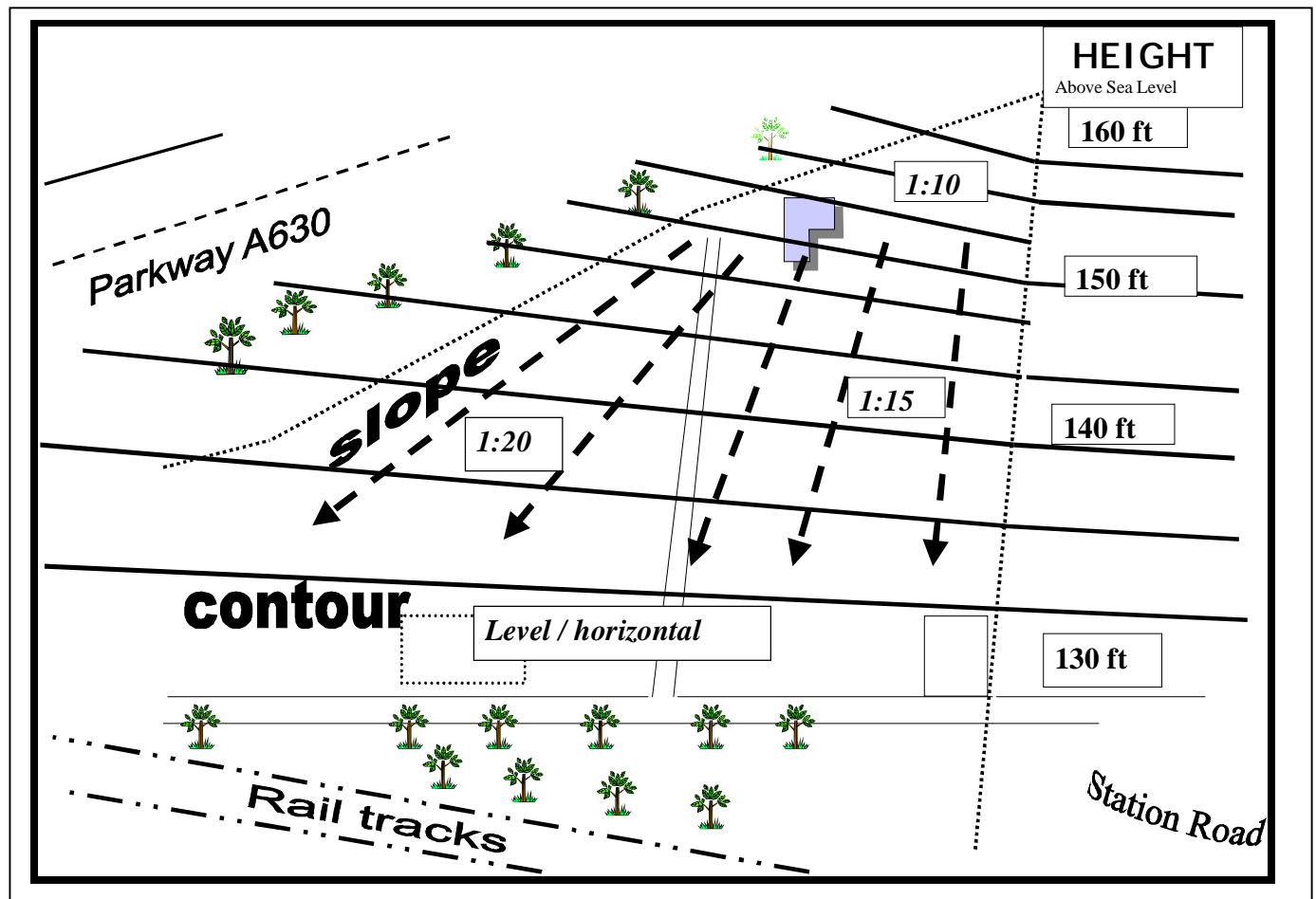
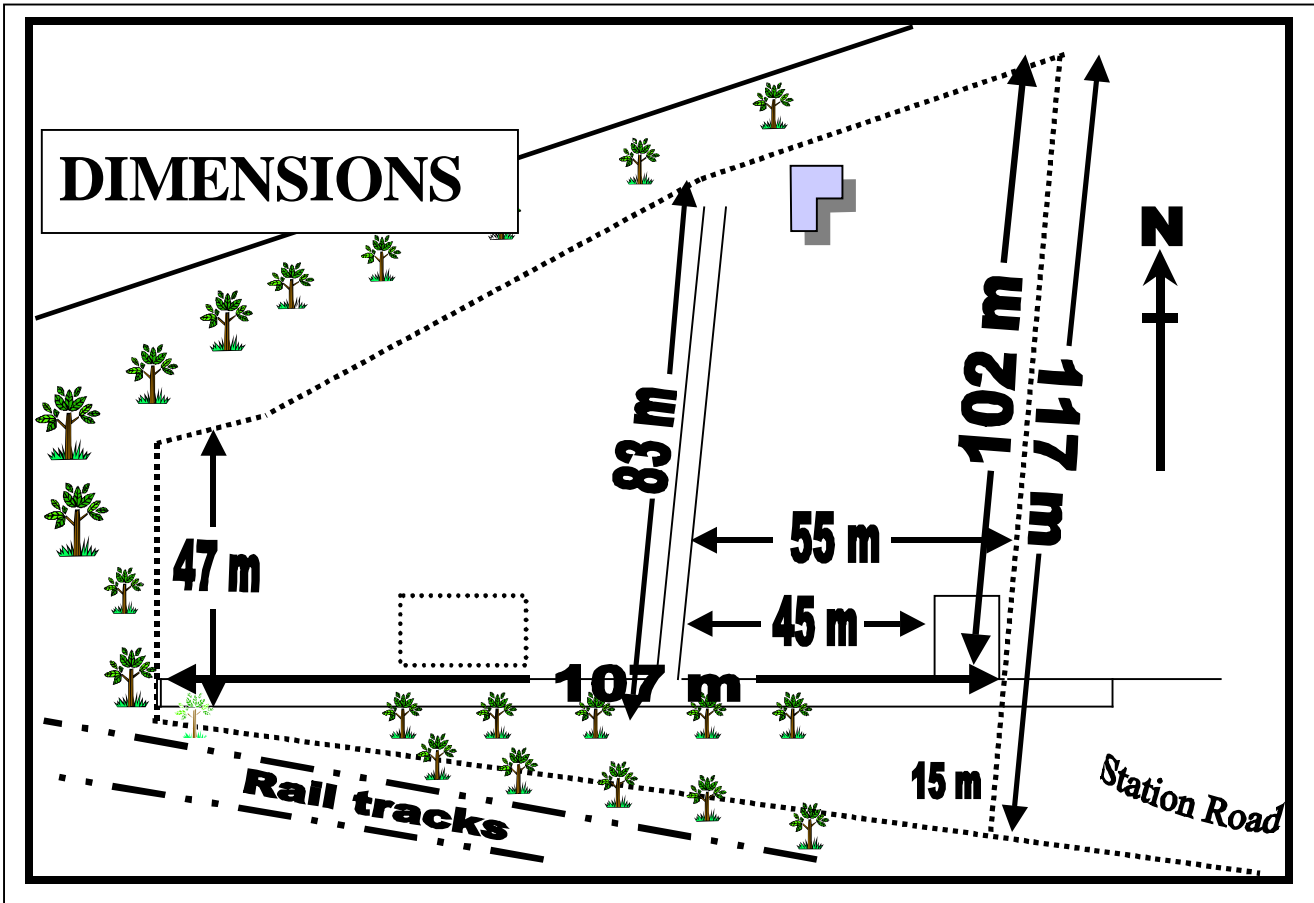
Rootstocks

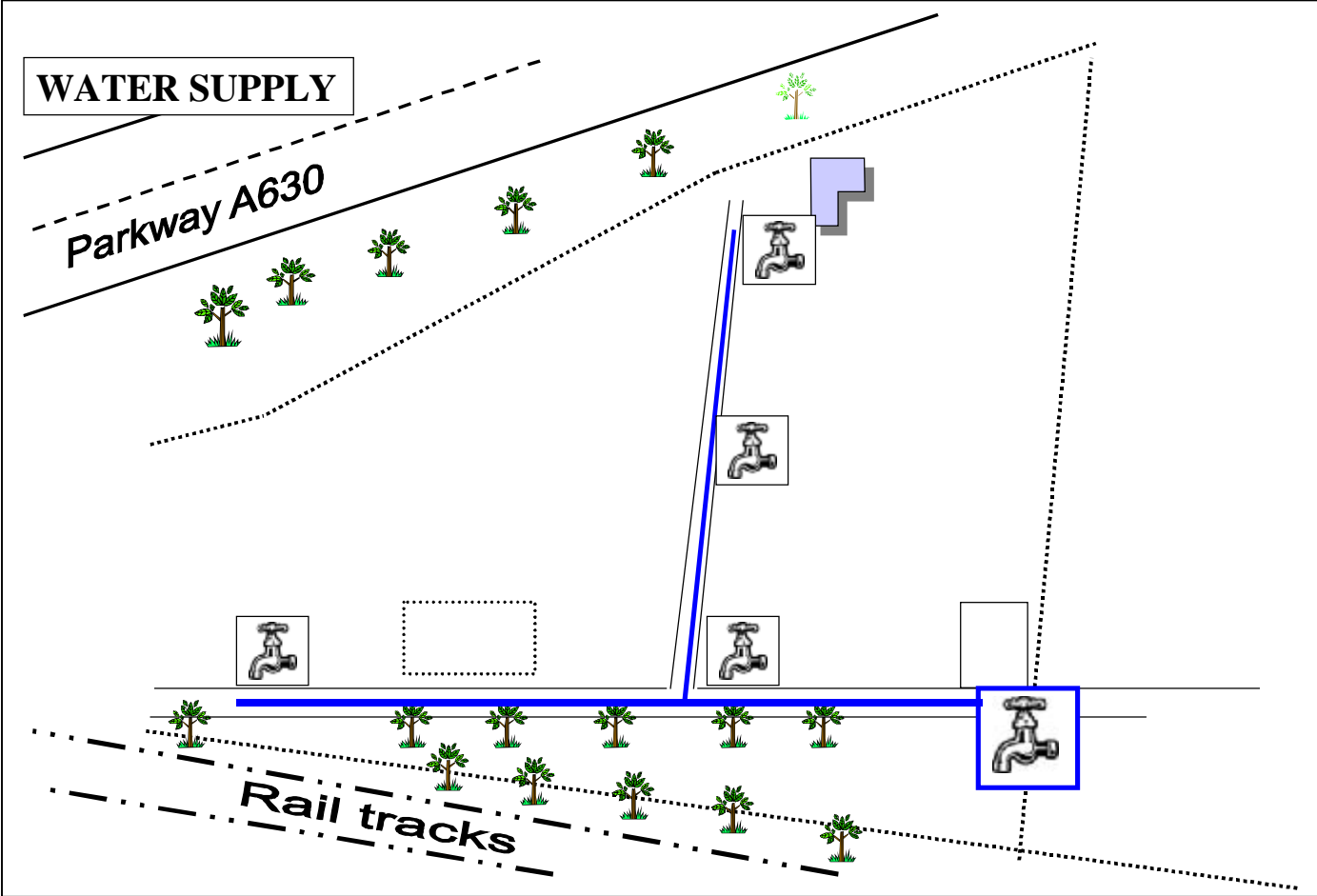
Dwarfing rootstocks produce smaller trees, which will begin fruiting earlier in their lives. Large, 'standard' roots will produce much larger final size, but cropping will be delayed.

Maintenance

1. Weed free for 5 years
2. Surface Mulch – Cardboard / chippings / Bark
3. Companion plants around fruit - Creeping Comfrey / Limnanthes

3. Remedial Infrastructure





4. DEVELOPMENT PLAN – Overview

The site will be divided equally between public and private spaces and facilities. The recommended improvements are the essential preliminaries necessary to make the whole site viable.

The site is accessed via the Entrance[1], Station Road, a quiet Cul-de-Sac.

The central area will provide two sets of Terraces [9 &10], defined by raised beds. Major soil improvement will mean that new tenants start with a more fertile and workable soil, which means they are more likely to grow successfully. If there is enough demand, each strip of soil can be subdivided to provide twice as many allotments. These plots will be available for individuals or groups to rent. Each will be supplied with water storage. By providing communal facilities for tenants, the site will initially be open and uncluttered. This tidy appearance can be retained if tenants are encouraged to use temporary structures and techniques. If private sheds and greenhouses are required, they should be constructed along the tracks.

Shared facilities will be constructed to meet the communal needs of site users for shelter, security, fertility and comfort. Site users and visitors will be able to wash, rest and socialise in the Hut[2], with a shady canopy on the north and west sides. A converted shipping container sited behind the line of trees will provide secure Storage [3] for tools and materials.

The Meeting Area, Access Beds [6] and Polytunnel [7] are designed as an integrated horticultural facility for tenants and visiting groups, including children and people with needs. The Meeting Area will be planted with colourful and fragrant plants to provide a Sensory garden.

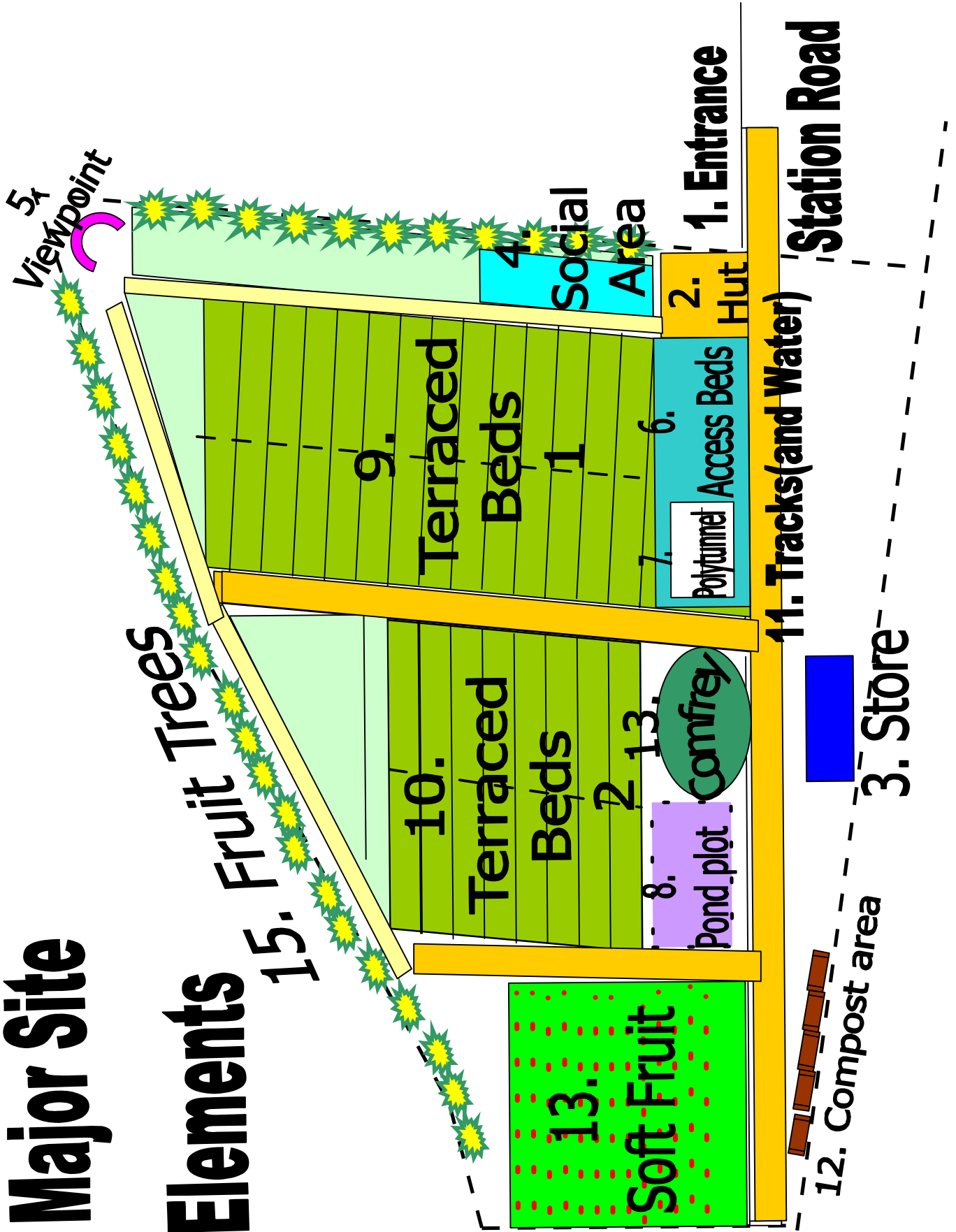
An informal, Social Area [4] will provide a safe space for young children and also extra meeting and seating. The natural Viewpoint [5] at the top of the slope will be developed with benches and a Willow windbreak. The Pond [8] can be retained providing it remains fenced off and only accessed under appropriate supervision.

At the end of the Track [11], there is sufficient space to store enough organic matter to supply the site. The Compost Area [12] will have the capacity for mature materials for immediate use and also fresh matter which will require storage and processing. The area of Comfrey [13] will be retained as a source of fertility, although it could later be developed.

A Soft Fruit [14] area will be established at the west end. Tree Fruit [15] will be planted around the perimeter fence to disguise it and convert it into a support for climbing fruit. When they start to mature in 3-5 years, they will provide an excellent communal resource and elevate the site to the status of a kitchen garden.

4. Major Site

Elements



4. SITE ELEMENTS

1. ENTRANCE

Description

The Entrance will be improved by retaining and shaping existing vegetation. The gates can be decorated with a sign defining the site. Site interpretation would be most suitable just inside the gates.

Functions

Provide a positive impression of the site for users and local residents.

Specification

Site logo could be adopted. Suggest a visual pun on "cat" + "cliff" ...

Installation

It would be preferable to commission sign painter, but would be adequate to commercially print a sign using a computer-generated image.

Maintenance - Simply tidying the entrance to keep it clear.

2. HUT - Site Centre Building

Description

Built of non-flammable material, concrete, with strengthened glass. Accessed from the back (north). The structure will present a minimal profile as viewed from Station Road, but the canopy will extend its scale on the north and east sides. The structure would be impressive which may engender confidence & increase chances of success.

Functions

Weather-proof to provide shelter for site users and visitors. A communal mess-hut with basic facilities such as seating and washing. The building will provide a focus for the site, especially in the winter. It could also serve as the base or headquarters for a project.

The Canopy will provide shelter from rain and sun. The whole of the site is visible from this point. The door and windows on the west side of the hut will provide a line of sight from the hut through the Access Beds to the end of the Polytunnel. Guttering will channel rain-water into storage tanks.

Specification

A simple square construction with a roof sloping north to south. A small structure, 4 m², would be sufficient as a core, because the canopy will provide an extension of shelter, 2 m beyond the building .

Installation

The hut should be erected after other preliminary improvements have been completed and once the site has a viable number of regular site users. Commissioning a customised structure from a specialist firm would include construction costs.

Maintenance

The building is designed to be secure, arson and vandal-proof. It could be upgraded at a later date when site usage is established with permanent utilities such as electricity, heating and lavatories.

3. STORE

Description

A standard Shipping Container, decorated to disguise (camouflaged) and situated behind the line of trees.

Functions

Provides secure lock-up storage facility for communal and individual valuables (e.g. tools and horticultural supplies).

Specification

Could be painted by local artists... graffiti representing nature?

Installation

Price includes delivery and positioning on site.

Maintenance

Repaint every ten years. Security system. Store, Hut and Gate could have the same keys and key-holders?

4. SOCIAL SPACE

Description

An arena defined by logs on 3 sides with a wooden feature up the slope on the north side and a central stone feature. A combination of meeting space or performance arena and adventure playground or compound for young children.

Functions

This general-purpose meeting space will provide an informal area for multiple social functions.

Specification

7-8 m wide rectangle stretching 10 metres up the slope.

Installation

Logs should be securely buried and pinned to the ground to prevent disturbance. Features should be sturdily constructed.

Maintenance

The initial structures would be temporary and could be adapted or replaced at a later date depending on the pattern of site usage.

Dedicated, safe play equipment for children could only be introduced if legal standards could be met.

5. VIEW POINT

Description

The point of highest elevation on the site provides the natural place for sitting looking down on the site. This is an opportunity to provide a facility with general amenity value, a willow half-circle arbour sheltering 2 or 3 simple wooden benches.

Functions

Meeting, seating, viewing. Willow structures provide an instant effect in the first year, which would define the site and give it more structure from the start.

Specification

Half-circle 4m wide facing diagonally down and across the site. Clusters of several varieties of willows massed to provide an instant windbreak and ornamental effect.

Installation

200 willow withies planted into holes 50 cm deep. 3 benches 1.5 m long constructed of heavy, dressed wooden planks attached to logs buried in the ground.

Maintenance

Willows planted at close-spacing will be more likely to remain at the same size and eventually compete with each other after 3-5 years. At this stage, either the plants could be thinned and trained into a more formal shape (dome) or the whole could be upgraded or re-planted.

Seating should last for ten years before it will need replacing or upgrading.

6. ACCESS BEDS

Description

A series of raised beds which will be easy to access and use. This area would provide the focus for visiting groups including children and people with needs.

Functions

Links up to the Hut and Polytunnel to provide a complete horticultural facility.

The first area of Access Beds will serve as an outdoor meeting space. It will also function as a Sensory garden and provide a stock of perennial herbs. The second area is dedicated to a series of raised beds for cultivation, suitable for those with limited physical mobility & accessible to wheelchairs.

Specification

New, untreated railway sleepers. Double height 75 cm (3 foot)

Flagstone linking path infilled with crushed brick hardcore topped with crushed limestone.

Installation

Specialist contractor with experience of similar work. Earth-moving digger required. Preliminary to Polytunnel construction.

Maintenance

Life expectancy: 20 years.

High raised beds are more prone to drying out. Should be replenished with ample organic matter to retain moisture.

7. POLYTUNNEL

Description

A large standard Polytunnel surrounded by beds with doors at either end. One quarter Patio area and $\frac{3}{4}$ raised beds.

Functions

The Polytunnel will provide an indoor, sheltered working space in which people can work when it is raining or too cold outside.

Polytunnels provide 3 main advantages horticulturally:

Early and overwintering crops

Sheltered production of seedlings and transplants

Hot summer crops, such as Cucumbers, Peppers and Aubergines.

Specification

Single span. Large gauge metal poles. Straight sided. Doorways at least 1.5 m (5 foot) wide at either end. Area of hard-standing covering at least $\frac{1}{4}$ of the space.

Installation

Could be constructed professionally.

This would be a morale-boosting task for potential site users to undertake under supervision.

Maintenance

Site users could form a club or sub-group for poly-tunnel users to co-ordinate usage.

Ultra-violet-resistant plastic will last 5-10 years before it needs replacing.

A spare cover should be kept in case of arson.

8. POND PLOT

Description

As developed by the current tenants, Extensive earthworks have established a medium-sized pond.

Functions

This provides a positive demonstration that cultivation is possible.

Specification

Existing fencing excludes unsupervised access.

Installation

Existing access and viewing points could be enhanced by decking.

Maintenance

It should be possible to reduce or remove the metal fencing by improving planting around the pond and restricting access on the steep sides.

9. TERRACED BEDS 1

Description

A series of level steps down the gentle slope. Terraces approximately 5 m wide set horizontally along the contour to provide flat areas.

Established by wooden edging pinned into the ground.

Pathways adjacent to edging.

Functions

Defines plots of land.

Deeper and more level soil aids cultivation.

Specification

Wooden boards 15cm / 6" thick x up to 50cm / 12-15" wide (= high)

Installation

Establish flat paths along contour by extracting topsoil to build up depth of soil in beds. Secure wood against continuous vertical edge of soil.

Maintenance

Untreated wood should last at least 15 years. It will rot on the side in contact with the soil.

Individual Plots – flat, angled terraces down slope

with water storage / store / patio / path / bed edge (also serves as seating)

10. TERRACED BEDS 2

Description

Soil in this area would also be cultivated and improved.

It would be terraced in the same way as Beds 1.

This could provide a second phase of expansion.

Alternatively, it could be further improved with fertility-building crops (green manures) until more tenants require plots.

Functions

Room to expand capacity.

Specification and Installation

As for Beds 1.

Maintenance

This area could be more appropriate for keeping animals if there were sufficient demand and commitment in the future.

11. TRACKS AND PATHS (including WATER SUPPLY)

Description

Existing Main Tracks are sufficient to facilitate access for major infrastructure works. One extra length of main access track is required.

Functions

The edges of the Main Tracks will be used to bury the water supply pipe, with at least 4 taps.

The track will define the Soft fruit area and provide access to the second area of Terraced Beds.

Paths complete a circular route around the top edge of the site.

Specification

Crushed brick substrate, topped off with limestone after completion of site development works.

Existing turf should provide sufficient surface for likely footfall on paths.

Installation

Tracks and paths should be defined by edge

Maintenance

Mowing turf twice a year would maintain the surface.

will be enhanced and finished with crushed Limestone.

Track and path Access - surfacing

Temporary vehicular access permitted for delivery of materials onto site.

Parking could be permitted along one side of the Main Track

12. COMPOST AREA

Description Two series of wooden bays.

Functions Smaller bays have removeable sides to facilitate turning from one bay to the next in sequence.

The larger bays would be suitable for long term storage for maturing materials. They would be big enough to receive a trailer or lorry-load of organic matter (5-10 Tonnes).

Specification

5 bays made of Marine Ply-board for short-term composting –
1.5 m / 5' deep x 2 m / 6' wide

and 4 made of 3 layers of Railway sleepers -
2.5 m / 8' deep x 3 m / 9' wide

Installation Pinned in place using metal spikes driven into the ground.

Maintenance

The compost area would require servicing both by hand, turning small heaps and distributing by wheelbarrow, and also occasionally by machine, depending on throughput .

13. COMFREY

Description

Perennial Green Manure.

Functions

Production of fertility – high Potash compost material and liquid feed.

Specification

Retain existing Comfrey.

Installation

Divide clumps and transplant to fill the whole area.

Maintenance

Cut vegetation above ground for processing. Will re-grow in 1 month.
Mulch with rough matter.

14. SOFT FRUIT

Description

Half an acre of rows of 30 types and varieties of soft fruit. Hazelnuts adjacent to the fence at the west end.

Functions

Provide a continuity of berries, currants and nuts from June to October.

Specification

Bare-rooted Organic and certified stock plants.

Soil improved with slow release fertiliser such as wool shoddy.

Installation

Planted into weed-free soil, the fruit bushes and canes would only require mulching between the rows to define pathways.

It would be possible to take cuttings and generate new plants for this area on site over the course of 6-12 months.

Maintenance

After 3 years, the main job will be to harvest , distribute and/or process the fruit. The first and second year will provide a taster and promise of what's to come.

Carbon-rich mulches such as cardboard can be maintained around and between plants.

Long-term annual pruning regime to regenerate and maintain productivity.

15. TREE FRUIT

Description

A continuous row of semi-dwarfing and half-standard Apple, Pear, Plum and other fruit trees.

Functions

As the trees and canes mature, they will eventually conceal and disguise the perimeter fence.

In 5 to 7 years, the trees will reach their mature stature and begin to bear their maximum crop which could exceed 50 Kg / 10 lb per tree. As a communal resource, this will provide many opportunities for many people.

Specification

Trees from Organic nurserymen would be preferable.

One-year old Maiden whips with more roots than top-growth would be preferable to commercial, pot-grown and chemically enhanced plants.

Bare-rooted stock lifted and planted during the dormant season (October to March).

Installation

Planting spaces should be prepared as hot-spots of fertility using loam combined with organic matter and slow-release fertiliser as surface mulches.

Maintenance

Trees will require guards against rabbits (which eat the bark).

Perennial green manure crops such as Creeping Comfrey or biennials such as Limnanthes should be established underneath and around each tree to suppress weeds, attract insects and improve appearance.

Pruning will be minimal during the first 5 years, but if this initial shaping is carried out, plants will be healthier, more fruitful and require less ongoing maintenance.

EXPENDITURE SUMMARY

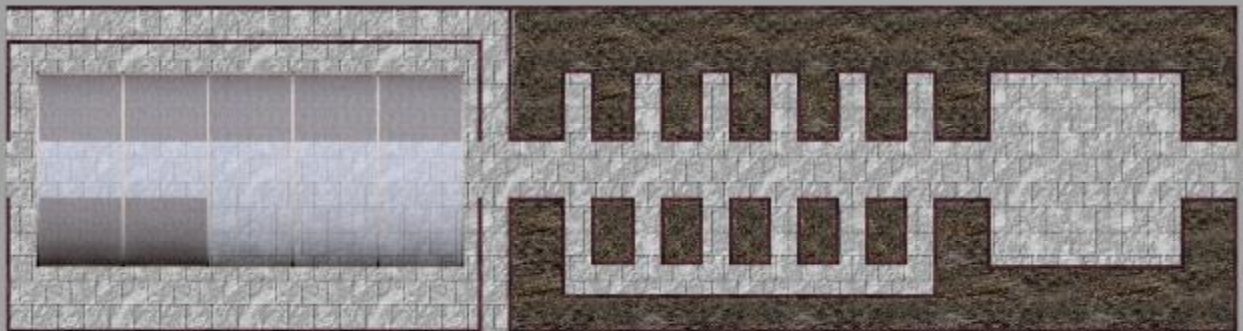
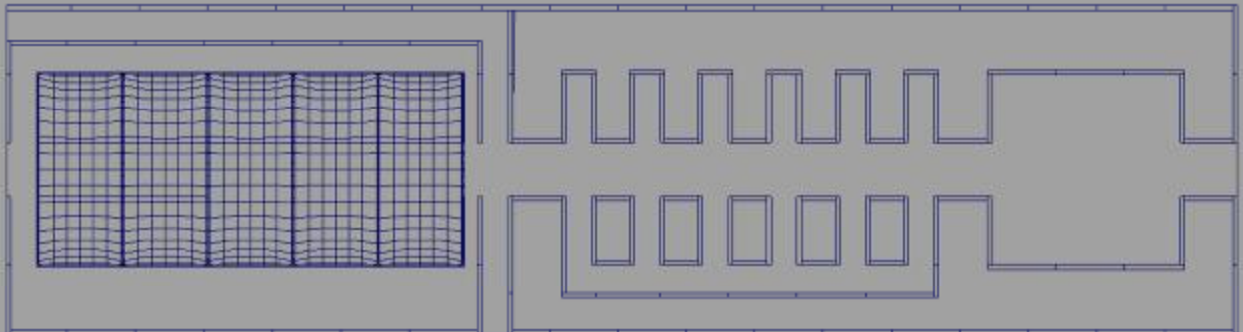
ELEMENT	Labour (days)	Materials (£)	Total Cost (£)
1. Entrance	1	0	50
2. Hut	7	5000	6000
3. Store	1	1400	1400
4. Social Space	2	200	300
5. View Point	2	100	200
6. Access Beds	15	5000	11000
7. Polytunnel	2	1500	2000
8. Pond Plot	0	0	0
9. Terraced Beds 1	10	5000	6000
10. Terraced Beds 2	9	4000	5000
11. Tracks and Paths	2	500	600
12. Compost Area	5	1000	1250
13. Comfrey Bed	1	50	50
14. Soft Fruit	5	1000	1250
15. Tree Fruit	5	2500	2750

0 0 0
00 0 0
2 0 0
00 0 0
02 0 0



verts: 4720 0 0
edges: 7820 0 0
areas: 3095 0 0
vols: 7288 0 0
fac: 15417 0 0

perforce: local file



POTENTIAL PROJECTS

1. Options for the Future.

A consideration of potential developments as the site develops in the medium to long term.

The suggested options have been ordered and grouped in order of achievability. I have considered critical factors such as Resources / Timescales / Costs / Skills / Legislation in addition to comprehensive SWOT analyses of a range of additional values and services.

This repertoire of options for the future is considered pragmatically, explaining what is needed to implement each option and their cost and resource implications.

Where options are dependant on specialist skills or target numbers of people, achieving involvement will be crucial.

Costings are included as additions to the expenditure on basic site infrastructure elements. They are estimated as basic minima required to achieve viability. Some of these costs could rise exponentially depending on strategy and scale.

The recommended site design incorporates provision of many of these Options:

- Produce, Orchard, Composting and Vermiculture (Worm-Farm) are integral to the development of the potential of the whole site.
- Wildlife, Ornithology (Bird Feeding / Observation) and Sensory Garden are simple extensions of existing facilities.
- School and Youth Opportunities, Environmental Education and Green Gym can all be accommodated in the public-access facilities as well as letting plots to individuals and groups.

One or more of these Options could be the basis for a project which would justify public funding.

The possibility of incorporating these options into a formal and funded project has been considered in greater detail separately, in 'Project Recommendations'.

Option 1. PRODUCE

STRATEGY

Individual plot-holders will make their own decisions about what and how much to grow, but any formal project should aim for:-

- Continuous production throughout the year (especially of greens and salads) to maintain participants' interest.
- Overproduction (seasonal gluts) will need distributing or processing.
- Diversity of crops and varieties. Introduce new tastes and flavours to the diet.

Fresh produce in the supermarket is very cheap due to the economies of scale involved. Small producers cannot compete on the same terms and in the same marketplace. They do, however, have advantages in terms of freshness, flavour and authenticity.

For small-scale growers, the greatest value to be gained from produce is actually derived from processing and adding value. In this context, the greater financial return could actually be derived from the social and therapeutic benefits of the process of growing rather than just the cash value of the final product.

RESOURCES

Individual tenants will decide their own level of ongoing investment in the materials required, such as fertiliser and horticultural sundries. If it is possible to anticipate this demand and bulk-buy, costs will be reduced considerably and it would also be possible to specify more organic inputs. This could follow the typical pattern of organisation found at allotment sites. A formal project should aim to provide some material support for individual plot-holders.

TIMESCALES

In horticulture and especially in organic production systems, returns on investment will continue for up to 5 years. It could take at least 3 years before the site reaches its optimal productive capacity.

It can take new producers several years to develop a regular pattern of production. The aim of soil improvement and infrastructure should be to accelerate this process by increasing individuals' chances of success from the start.

COSTS

Expense will be reduced considerably if demand is anticipated and provided for by bulk-buying.

SKILLS

Horticultural knowledge has been focussed on conventional and ornamental gardening. Few people have had the experience of growing food on allotments in the past 30 years. It is likely that most people would prefer informal demonstration, support and guidance rather than formal, accredited training.

LEGISLATION

Food is exempt from Value Added Tax.

The Local Authority would object if the site were used as a market. Fewer restrictions would apply to produce sold off-site.

STRENGTHS

Previously productive land.

Sufficient area of land to produce several tonnes of food each year.

WEAKNESSES

Requires annual inputs to maintain output.

OPPORTUNITIES

The commercial trend towards market gardening confirms that there is increasing demand for fresh produce. Consumer recognition of local food means that allotment produce would be a premium product.

If the whole site can be encouraged to adopt Organic methods, there would be a consequent improvement in the health and therapeutic benefits available.

THREATS

Meat and Dairy products have been subject to stringent restrictions in the wake of the measures to prevent BSE, Foot and Mouth and more recently Bird Flu and Salmonella.

Although plant produce avoids these dangers, measures should be taken to ensure food hygiene, especially for vulnerable groups and individuals.

Avoiding the use of chemicals will remove the danger to health both from direct exposure and residues in produce.

Option 2. FRUIT ORCHARD

STRATEGY

Plant productive perennials (trees and climbers) around the perimeter of the site and establish an area of Soft Fruit (bushes) at the west end.

RESOURCES

After establishment, perennial crops require very little maintenance compared to the yearly efforts required for annual production.

Plants should be kept free of weeds for the first 5 years.

A pruning regime should be established, although this would require only minimal intervention (mulching) in the early life of the trees.

TIMESCALES

Fruit and perennial crops are a long-term investment, but are potentially the most productive use of land. It will take 5-10 years for plants to reach their full productive potential, but this level of return could then continue for many decades.

Establishing an extensive range of fruiting perennials would effectively be a statement of intent, which would generate a sense of security. It would also help to ensure the success of the site in the long-term.

The concepts of 'Agroforestry', 'forest gardening' or 'Permaculture' are innovative but pragmatic long-term approaches to food production, which are becoming more popular.

COSTS

Although initial investment would be substantial, this element would be relatively cheap compared to other infrastructure items. In the long-term, this would provide the greatest return on investment.

Sponsorship by individuals and even local businesses could generate income to cover the costs of establishment.

SKILLS

Planting should be carried out to a high specification during the dormant season (winter). See Appendix for a detailed description of good practice.

The final planting plan should record varieties. The main skill required would be a schedule for cropping and distributing produce

LEGISLATION

Some local councils still object to the planting of perennials because it increases the sense of permanent tenancy. Established fruit as a shared element around the edge of the perimeter could actually be retained if the site was ever required for development in the future.

STRENGTHS

Apple trees are already thriving on this site. Its south-facing aspect means it is suitable for all types of fruit, nuts and useful perennials.

OPPORTUNITIES

An extensive demonstration of the usefulness of permanent plantings will incrementally increase in value each year.

In therapeutic terms, fruit will offer many rewards and opportunities for gentle activity.

THREATS

Plants would require protection from vermin with tree guards for 3-5 years. Fruit would be vulnerable in its first 3 years, but is unlikely to be a target for vandalism. Once established, trees would be relatively secure.

Option 3. ORGANIC MATTER.

COMPOSTING and VERMICULTURE (WORM-FARM)

STRATEGY

Inputs of Organic Matter will be required not only to establish the site, but also on an ongoing basis thereafter.

Worm-composting would provide an introduction to the composting process.

A demonstration facility with interpretation would provide a visitor attraction like the elements listed in Option 4.

RESOURCES

Abundant feedstocks are available from the waste stream

TIMESCALES

Compost, manures and leafmould require 6-9 months processing before use. It is advisable to build up a stock of mature material for more sophisticated uses such as the production of potting media for propagation.

COSTS

Anticipated throughput (50-100Tonnes p.a.) would require mechanical turning of heaps on a monthly or bi-monthly basis.

The basic feedstock can be improved nutritionally by adding concentrated fertilisers such as Volcanic Rockdust, Lime and Seaweed.

SKILLS

Maintenance of the Composting operation is integral to the efficient functioning of the whole site in the long term. Although the science involved is rudimentary, regular checking and monitoring will be critical. See Appendix for detailed guidelines on establishing and managing a composting site.

LEGISLATION

Commercial sales of compost products would require conformity with a mass of restrictive legislation, such as the 'Animal Byproducts Order', which has effectively outlawed the composting of food waste. Therefore, the composting operation should primarily be run to supply the site.

STRENGTHS

As a consumer of green waste, the site would legitimately be able to accept deliveries of compostable materials. This service could generate income from charges on waste delivered. This income could either be a direct payment pro rata or a donation, which would suit the profile of a not-for profit organisation.

WEAKNESSES

It will be necessary to establish responsibility for servicing the compost storage area and distributing the final product around the site.

OPPORTUNITIES

There is potential for composting to be an income-generating activity, based on the disposal costs of green waste. Research indicates that there is a demand for capacity to dispose of and process compostable materials. This could be set up as a social enterprise in itself.

The national organisation promoting home and community composting is based in Sheffield and is available to advise on processing and funding.

www.communitycompost.org.uk

THREATS

As with many other aspects of horticulture, there are potential threats to health involved in composting, such as heavy lifting, airborne spores and infectious diseases. Good practice, common sense and an awareness of the health issues should avoid these problems.

Option 4. VISITOR ATTRACTIONS.

WILDLIFE

ORNITHOLOGY (Bird Feeding and Observation)

SENSORY GARDEN

STRATEGY

These options are combined because they are all available within the recommended design and can be established with minimal extra investment. As activities, they can be run as workshop opportunities for a wide range of visitors.

TIMESCALES

The site and surrounding areas have been improving for wildlife for more than a decade. Cultivation should increase the diversity of flora and fauna.

COSTS and RESOURCES

Each of these elements would be enhanced by the provision of demonstration facilities and interpretation boards to explain each subject.

SKILLS

Each of these options would require specialised expertise. This could be bought in as visiting speakers. Alternatively, this could be achieved by developing roles for guardians or wardens who would focus dedicated time and interest on these topics.

LEGISLATION

Work with visiting groups, supervised by their regular carers, may require Public Liability insurance, as with other members and users of the site. This should be available from the National Society of Allotment and Leisure Gardeners.

STRENGTHS

Activities and events based around these areas of general interest would attract visitors and engage more people with the site.

The site provides several examples of the reclamation of former industrial infrastructure and its natural regeneration, as illustrated by the colonisation of the rail tracks by young Birch saplings.

WEAKNESSES

The whole area has been subject to high levels of contamination and pollution from former industries and transport. Although this legacy is improving, there are still reminders, such as relatively high levels of airborne dust in dry, windy weather. It is anticipated that the situation will continue to improve and that nature will continue to co-exist with industry.

OPPORTUNITIES

There is a deep and wide-ranging connection to nature and environmental benefits amongst many sectors of the local population. The allotment site should be developed in conjunction with other local environmental improvements to establish a local greenspace network, linking with other features such as Cat Flash.

THREATS

Vermin such as rats and rabbits have been reported as an existing problem. Control measures will need to be implemented to avoid excessive competition.

Option 5. VISITING GROUPS. SCHOOL AND YOUTH OPPORTUNITIES ENVIRONMENTAL EDUCATION GREEN GYM (Horticultural Therapy)

STRATEGY The establishment of the site as a good horticultural facility would support participation for a wide range of users. As the infrastructure improves, a wider range of activities is possible, facilitating access for more people.

An opportunity exists to set up a funded project to encourage more contacts with and uses for the wider local community.

This project would have an excellent chance of becoming self-supporting and income-generating in the medium term. Groups and individuals with care needs and budgets could enter into defined service contracts which could be discounted or free while the project is funded, with the intention of charging as and when project funding comes to an end (exit strategy). In this scenario, the first fully funded year would be a test; year 2 would trial income generation with the intention of becoming fully self-supporting in the third year.

Horticultural facilities organised by a formal project could be used to support 3 main categories of potential users or beneficiaries:

1. MENTAL HEALTH Allotments have always been used to provide a venue and therapeutic opportunities for groups promoting mental health.
2. PHYSICAL HEALTH – Occupational Therapy
3. CHILDREN - Outdoor Classroom
 - a) Schools could formally use the project within directed teaching time to deliver elements of the **curriculum** in an outdoor context. Opportunities for learning from direct experience are rare and teachers should welcome the chance.
 - b) Provision could also be made for children who are **excluded** from school. Often these individuals respond positively and benefit from direct connection with nature.
 - c) Out of School and After School clubs.
 - d) Holiday activities and play-schemes.

Each of these categories of users would require the same basic humane approach from a horticultural perspective. The project should aim to combine and integrate diverse users. Facilities may need upgrading and customising for specific, identified needs.

RESOURCES

A project's most valuable asset would be the people involved, site members, potholders, volunteers and visitors.

All users making a valuable contribution to the project should be treated as **volunteers**.

They can also be assessed, categorised and supported depending on their needs:

1. Capable **Volunteers** who contribute to the process.
This group could support the running the project and could also be engaged as helpers or mentors.
2. '**Clients**', '**service users**' and '**user groups**'. Individuals and groups organised by social service agencies or with diagnosed and defined health needs.
3. '**Clinical referral**' and '**self-referral**'. Local health practitioners could be informed about the services available and encouraged to set up systems for referring their clients to the project. Others may have undiagnosed and undefined problems can be encouraged to join the project on their own initiative.

Taster sessions can be organised to engage with groups and individuals with the aim of developing long-term connections with the site.

TIMESCALES

The capacity for the site to support users will be dictated by the course of horticultural development. It will be necessary to predict the level of this capacity each year at the start of the growing season. In the first year, the range and quality of support services will be developing as patterns of usage are established.

Scheduling. A system of timetabled sessions could be arranged to suit a variety of visiting groups and individuals

Weather and Seasonal patterns will decide what activities are available. A project would also need to have the capacity to occupy people during wet and cold weather.

COSTS

Budget. If usage can be defined and predicted, it would be possible to price packages of provision and set up systems for charging for services.

Charges for services provided should take account of the historical investment in the site and the time required to prepare for each session as well as the interactive contact time on site.

Business plan

Employment. The most effective model of employment used by such projects is to have a core of horticultural support supplemented by sessional workers to provide for specific groups. Initially, additional needs can be supplied out of regular care and support staff accompanying groups and individuals. As the pattern of activities develops, it would be advisable to train capable people to provide additional support to extend care capacity.

SKILLS

Informal support and skills development. Most tenants will require support in their first year of growing. A demonstration plot could be established to show people what to do and provide ideas and plant stock.

Formal training leading to qualifications. If the remit of a project was sufficiently broad, it could have the capacity to run training in Horticulture and aspects of Care work. These subjects are available either as City and Guilds or National Vocational Qualifications. It may be possible to organise such provision with external organisations which have the necessary capacity and experience.

LEGISLATION

Basic site insurance should be sufficient to cover site members.

The project should have a policy of providing an appropriate level of horticultural facilities and support services, without assuming full responsibility for vulnerable individuals, which responsibility should remain with the care organisation (or the individual).

It would be possible to specialise in one specific area of support (i.e. children or disabled) and meet all the legislative requirements to assume legal responsibility for that particular group. However, this would be a disproportionate demand on finances and resources and would require dedicated funding and worker time.

STRENGTHS

The project as designed would have massive advantages especially for those working within mainstream services. Most teachers and care workers are aware of the potential benefits derived from horticultural activity but are unable to devote the time and resources necessary.

From the perspective of care provision, the site as a whole can be developed to offer several advantages. Elements such as areas for fruit and benches

and shelters around the site provide a remedial level of engagement, which may suit some users.

WEAKNESSES

The area has not yet benefited from any major investment in social infrastructure. It has also been deprived of any of the major agency initiatives, such as Surestart.

This could actually be presented in a positive light as an argument in favour of public investment in a horticultural therapy project.

OPPORTUNITIES

This would be a chance to engage with Regional and National support networks and organisations, such as THRIVE, the national Horticultural Therapy charity, and the National Federation of City Farms and Community Gardens.

Liase with relevant local support agencies and institutions.

Independent Living Allowance

Changes to the financial support system aim to promote the autonomy of recipients and permit them to make their own decisions about how their care needs are met. This means that individuals could choose to use part of their allowance to fund participation in the project.

Incapacity Benefit.

The government has announced an ambitious target to reduce the number of people on this benefit by 1,000,000. Although the mechanisms for delivering this intention have not yet been announced, it would be appropriate to explore a projects capacity for contributing to this aim. Long-term unemployed and those in receipt of Incapacity Benefit could be trained in horticulture and care work. This could then qualify them for paid posts either at this project or on similar initiatives.

THREATS

Negative perceptions of young people and mental health could create tension and friction. Tenants need to understand the aims of the project and support access for a diverse range of users and groups.

The needs of a project should be in balance and compatible with the needs of individual tenants.

The project would need to be constituted with sufficient legal status to take on responsibility for service users and be a financially accountable public body.

Option 6. ANIMALS

HUSBANDRY (LIVESTOCK) / MINI-BEASTS

STRATEGY

Any option involving animal care should only be contemplated once a secure and populated site has been established. Costs and potential threats weigh heavily against these options.

RESOURCES

Some part of these options could be affordable if the animals are kept as an individual's private responsibility.

Insurance for animals would be hard to secure on the site.

TIMESCALES

Safe and secure animal rearing on site would be an eventual indicator of success in the long term, but could be very disruptive and divisive to the rest of the site.

COSTS

Professional care of animals, as in a zoo or demonstration centre, would be unjustifiably expensive.

Amateur dedication (and charitable donations) can make an animal sanctuary viable in some areas.

SKILLS

Animal husbandry is a complex vocation. Residual skills amongst agricultural sector workers.

LEGISLATION

Intervention by the RSPCA in recent years has exposed the need for stringent standards in animal care. This has also elevated the minimum standards for animal care.

STRENGTHS

Animals appeal to kids and adults alike. Local people still have residual memories of husbandry. The site has previously been used for grazing and pigs.

WEAKNESSES

Keeping animals on site has been tried in recent years and failed.

OPPORTUNITIES Because they require daily attention, the presence of animals on site would increase usage with concomitant benefits for security.

THREATS People become even more attached to animals than they do to plants. The danger of losing livestock to disease or vandalism is high. During the scares over e-Coli 157, BSE and Foot and Mouth, rural and urban visitor centres with animals were closed down on public health grounds.

Option 7. CATERING COMMUNITY CAFÉ / SHOP

STRATEGY

Any formal venture into catering would definitely not be justified in the initial stages of site development.

Informal systems run by individuals and at their own risk would be recommended initially.

Alternative provision of hospitality and refreshments (i.e. Tea and biscuits) for tenants and visiting groups will evolve informally amongst site members, groups and tenants.

RESOURCES

The volume of trading activity required to justify a shop or café, hundreds of customers each week, is unlikely to ever be achieved on this site.

Both options would require dedicated and secure premises, built to the requisite standards and conforming with Planning Regulations

TIMESCALES

If the site eventually developed into a demonstration centre, there may then be sufficient trade to re-consider the possibility.

COSTS

Although there is a current trend or fashion for café culture, the potential costs of any formal catering or café would be prohibitive both to set up and to run. Such operations are notorious for having high levels of wastage which can turn profits into losses. It is exceptionally unlikely that any funder would bankroll a café or shop indefinitely.

Qualified staff would be required.

Suitable buildings would cost tens of thousands of pounds.

SKILLS

Entrepreneurial experience if available should be channelled into the activities of the legally accountable body. Trading in this way for charitable purposes would avoid legislative constraints.

LEGISLATION

The law relating to food hygiene is complex and extensive, and has often been applied on a precautionary basis.

STRENGTHS

There is a strong and continuous tradition of Allotment Societies running small, sub-commercial trading activities to reduce their own costs. If the site is secured by sufficient usage in the first year, it would be advantageous if tenants took on this responsibility. This activity would attract other people onto the site. The level of commercial activity is unlikely to present any threat to the D.I.Y or Garden Centre sector.

WEAKNESSES

Any trading or catering activities will be dependant on individuals willingness to take on these responsibilities. The site is relatively isolated and does not have the level of passing trade, which could justify a catering operation.

OPPORTUNITIES

Suitable facilities already exist in the vicinity, such as the pub and the day centres.

Informal systems of sharing produce and individuals' privately prepared food would not incur legislative constraints.

THREATS

Food preparation and processing is subject to stringent legislation and any commercial activity would require conformity.

PROJECT OPTIONS – Rated by Feasibility

RATING:-	TIME	PEOPLE	LEGAL	COST
1. Produce	6-12 months	Self-interest	Minimal	Medium
2. Orchard	Minimal input for maximum return	Community catalyst	None	Low
3. Organic Matter – Composting & Vermiculture (worm-farm)	Regular maintenance	Necessary for success	Minimal	Low
4. Wildlife / Ornithology Sensory garden	Visits	Attractions	Minimal	Low
5. School and Youth Opportunities Environmental Education Green Gym	Ongoing usage long-term	Visitors and groups	Many legal concerns	High
6. Animals - Husbandry / Mini-beast	Daily every day	Specialist	Stringent	Medium
7. Catering (café / shop)	Long-term ambition	Need high numbers	Statutory	High

Funding can change depending on what is the flavour of the month.
Some issues like food, health and kids are perennial issues

2. COMPARATIVE STUDY

Market Economics

The market rate for setting up new allotments can be assessed by the local case where Sheffield City Council supervised the relocation of approximately 60 allotment plots to replace a site required for development.

Excluding the value of the land, each allotment plot cost £8,000 to establish, with facilities such as greenhouses provided.



Two years later, the site is not fully tenanted due to lack of consideration of the human dynamics involved in such an undertaking.

Within the local region, several examples can be identified where a balance between the needs of a project and an

allotment site have not been achieved. Each illustrates particular advantages and drawbacks.

CASE STUDIES



1. **Brinsworth** allotments operate as the classic, traditional pattern of self-organising individuals with no access and little interest for the general population. Although this site is maintained to the highest standards of cultivation, it appears chaotic and complex to an outsider, because each tenant has constructed their own greenhouse and shed facilities.

This is exacerbated by the presence on site of dozens of pigeon lofts and lock-up garages. Food production is restricted to a personal or domestic scale by the limitations on space.



2. **Hunloke Community Gardens** in Chesterfield provides an illustration of investment in a community facility without sufficient means for the local population to access and use the site. This facility provides excellent urban open space but access is restricted to only a few hours a day when the horticultural project operates. The

productive areas are well designed, but have been cultivated with monocultures of main crops for sale. The project provides a venue for training and includes some user-group access (Surestart model).

3. **Herringthorpe allotments Valley** project is a multi-agency partnership, led by Rotherham Primary Care Trust. After 3 years, site infrastructure is incomplete and opportunities for involvement are consequently restricted. Although this project has been aware of the full range of outputs which can potentially arise from an allotments project, these aspirations have not yet been realised. Despite close working relationships with the relevant agencies and being very well resourced, the site has not been designed for community access. Ambitious plans for horticultural training have not been realised. The site is presently only appropriate for clients with mental health needs who have robust physical strength and are prepared for hard labour.

Production has been organised on an agricultural or field scale which does not provide a demonstration of what home or allotment gardeners can achieve. Horticultural assets like herbs, flowers and fruit which would increase the range of activities and interest are absent. Although the project advertises itself as following “organic principles”, the reality is that production is currently dependant on chemical fertilisers and herbicides, which could be dangerous for volunteers to work with and may contaminate produce.

3.





4. Handsworth

Community Gardens is a small allotment site, surrounded by commercial industry, which has been regenerated providing a balance of private plots with community access areas. This demonstrates considerable community coherence, but has lacked a core focus on production. Horticultural I training

courses for the general public have been run at this site, organised through the Workers' Educational Association, but have focussed on conventional, ornamental gardening rather than organic food production.

5. Heeley Farm has been a flagship for the community horticulture sector for more than 20 years. Over this period, the organisation has developed the capacity to exploit funding opportunities (£1,000,000 p.a.) and has diversified to act as an umbrella group for many related topics such as recycling and energy conservation. It is a hybrid in funding terms, drawing income from a wide range of sources. Their inner-city site provides many advantages in terms of location and a supportive local population.

Heeley Farm runs the only accredited training in organic food production in this region, but this has only been accessible to claimants on a low income who are prepared to devote 3 days a week to the certificate. Although this pattern has been successful in the past and despite a strong focus on commercial activities, changes to funding regimes mean that the organisation has recently had to sack several workers including the horticultural manager. This illustrates that even competent organisations in the Voluntary, Community and Faith sectors are subject to changes in funding regimes.



6. Herries Road allotment project (LEAF - Local Enterprise Around Food).

Established 7 years ago, this project had ambitions to become a community food distributor and hoped to set up a community café. The reality on the ground is that they have only just now established a coherent site with improved soil and a path network.

The site is used by mental health groups and schools, but has lacked sustained input from local agencies.

As with many other community projects, LEAF is dependant on the single horticultural support worker, whose knowledge and experience dictate what opportunities are available to user groups. The project has recently been selected to be a national demonstration centre as part of the SPAN project, a government-funded initiative to set up a network of centres of excellence to promote organic growing.

Sheffield Wildlife Trust have recently taken on management responsibility for the project and a bid for continuation funding has been submitted.



7. Greenfingers Horticultural Therapy, Burngreave.

This initiative, based on two allotments in an inner-city, industrial area, provides an excellent model for the therapeutic use of horticulture. The project serves up to 20 clients and up to 12 volunteers per week, promoting their mental health. There are five sessional workers, a manager

and horticultural support worker. This means that there are always at least two carers available at any time. This arrangement may seem lavish, but it is only providing the minimum statutory care and at a cost which is competitive compared to other provision. Because the project is well-designed around a small clientele, both staff and users are well co-ordinated and well motivated. Many of the staff are parents or carers who find this pattern of working fits with their other responsibilities.



8. Infield Lane. Private allotment site in Darnall.

Illustrates the trend toward community access facilities and the difficulty of dealing with a huge legacy of neglect.

Tenants are effectively and democratically self-organising to run and improve their site. They are able to ensure continuity of usage on tended plots and are beginning to reclaim areas lost to

cultivation in the last 20 years.

Their society has pioneered a community-access allotment with financial and practical support from Tinsley golf course, which has finished, leaving a prepared site in mothballs. What is missing is the capacity to engage the range of social groups which will populate and animate the site.

Infield Lane also illustrates the challenges involved in regenerating an old site, with contaminated soils and overgrown wilderness, as compared to starting afresh on a green-field site.

CONCLUSIONS

Each of these cases illustrates examples of good and bad practice. As with gardening, it pays to learn from the success and mistakes of others.

PROJECT	POSITIVES	NEGATIVES
Brinsworth	100% tenanted Integrates husbandry	No plots available Shanty-town appearance
Hunloke	One huge single allotment	Community excluded
Herringthorpe	Inter-agency collaboration	Community antagonised and resentful Scale out of proportion False claim to be Organic
Handsworth	Site reclaimed and used Training courses (WEA)	Lack of organic investment Piecemeal development
Heeley Farm	Diversity of funding Community access and acceptance Public profile	Bureaucracy-dependant
Herries Road	Site infrastructure School visits scheme	Unmanaged and lacking direction
Greenfingers	Model for therapeutic horticulture Link to local surgery Open to wider volunteers	Limited capacity
Infield Lane	Community representation and self-organisation	Outreach to wider community

3. Organisation

Site Rules and Regulations

It will be necessary to agree on a simple and clear set of guidelines on how to use the site. This should be formalised in a Tenancy Agreement, which should be written specifically for this site.

This document should include clear instructions covering the following topics:-

- Tenancy – Conditions / Rules
- Rent / Concessions / Collection / Renewal dates
- Raising Money / Funding – Sale of Produce / Donations
- Public Liability Insurance / Duty of Care
- Hazards and Nuisance – Pond / Butts / Bonfires / Ecocides
- Security / Theft / Vandalism
- Dispute resolution

STRUCTURES

Site members would be entitled and encouraged to use shared facilities to start with.

If and when individuals wish to build their own structures, policies will have to be in place regarding: height and size of structures, temporary and permanent structures (with foundations), directions on materials (e.g. glass is banned on allotment sites by some councils).

See Appendix for basic Tenancy.

A Constituted Group

Although it is impossible to predict uptake of plots and site usage, it would be advisable to constitute an autonomous representative decision-making body made up from site users at the earliest possible opportunity.

See Appendix for blueprint Constitution.

This body would fulfil the functions of a traditional Allotment Society and would eventually be responsible for the whole site. It would not be expected to take any responsibility for a funded project, at least initially, but could be developed to manage a sustainable project in the medium to long term.

The site as envisaged in the proposed design is conceived such that it could be used just by individual tenants with or without the presence of a formal funded project.

Any project arising should initially have a defined remit to build autonomous capacity in the accountable body formed to manage the site. If opportunities arose within the defined time-frame for extending the life and functions of the public body, the Community Partnership, this should not impact on the autonomous accountable body.

The intention would be that the activities of a constituted group would be complimentary to the functions of a funded project. Group and project would have a mutually beneficial relationship. Tenants who have been introduced to the site and helped to get started by the project will be a valuable resource for its continuity in the long-term.

The wider the appeal and involvement in this group, the greater will be its capacity to network and outreach into the wider community.

Rent

Realistic rents should be set for the facilities provided.

It would be possible to simply charge tenants a flat rate for renting a plot and water charges.

It is expected that this site will attract and engage with a wider spectrum of users and visitors.

1. MEMBERS - It would make sense to set up a system of site membership to include all categories of users. Site members would have access to the shared facilities around the site. This charge could be set at a relatively low figure of £10-20.

2. TENANTS – Individuals or groups renting specific plots of ground on an annual basis.

This charge should be approximately £20-30 for half of a terraced bed. The area of land could be valued per square metre and charged accordingly (roughly: 20 p per m² x 100 m² = £ 20). This system could be disputatious. If this figure includes water, it will be necessary to accommodate service and consumption costs.

3. POLYTUNNEL CLUB – Use of shared facilities could be charged at a nominal figure. Hence instead of having to invest hundreds of pounds in their own structure, members would be entitled to access part of the shared structure for £10 p.a.

Accountable Body Model Group Constitution

Constitution of _____ Group

1) Name.

The name of the Group shall be

2) Aim.

The aim of the Group shall be to.....

3) Powers

In order to achieve its aim the Group may:

- a) Raise money
- b) Open bank accounts
- c) Acquire and run buildings
- d) Take out insurance
- e) Employ staff
- f) Organise courses and events
- g) Work with similar Groups and exchange information and advice with them
- h) Do anything that is lawful which will help it to fulfil its aim.

4) Membership.

a) Membership of the Group shall be open to any individual over eighteen without regard to disability, political or religious affiliation, race, sex or sexual orientation who is:

- u interested in helping the Group to achieve its aim
- o willing to abide by the rules of the Group and
- o willing to pay any subscription agreed by the Management Committee.

b) The membership of any member may be terminated for good reason by the Management Committee: Provided that the member concerned shall have the right to be heard by the Management Committee, accompanied by a friend before a final decision is made

5) Management.

a) The Group shall be administered by a Management Committee of not less than three and not more than individuals elected at the Group's Annual General Meeting (A.G.M.).

b) The Officers of the Management Committee shall be: the Chairperson, the Treasurer and the Secretary.

c) The Management Committee may co-opt onto the Committee, up to three individuals, in an advisory and non-voting capacity that it feels will help to fulfil the aim of the Group.

d) The Management Committee shall meet at least two times a year.

e) At least three Management Committee members must be present for a Management Committee meeting to take place.

f) Voting at Management Committee meetings shall be by a show of hands. If there is a tied vote then the Chairperson shall have a second vote.

g) The Management Committee shall have the power to remove any member of the Committee for good and proper reason.

h) The Management Committee may appoint any other member of the Group as a Committee member to fill a vacancy, provided that the maximum prescribed is not exceeded.

6) The Duties of the Officers.

a) The duties of the Chairperson shall be to:

- Chair meetings of the Committee and the Group
- represent the Group at functions/meetings that the Group has been invited to and
- act as the spokesperson of the Group when necessary.

b) The duties of the Secretary shall be to:

- keep a membership list
- prepare in consultation with the Chairperson, the agenda for meetings of the Committee and the Group
- take and keep minutes of all meetings and
- collect and circulate any relevant information within the Group.

c) The duties of the Treasurer shall be to:

- supervise the financial affairs of the Group and
- keep proper accounts that show all monies received and paid out by the Group.

7) Finance.

a) All monies received by or on behalf of the Group shall be applied to further the aim of the Group and for no other purpose.

b) Any bank accounts opened for the Group shall be in the name of the Group.

c) Any cheques issued shall be signed by the Treasurer and one other nominated member of the Management Committee.

d) The Group shall ensure that its accounts are audited or independently examined every year.

e) The Group may pay reasonable out of pocket expenses including travel, childcare and meal costs to members or Management Committee members.

8) Annual General Meeting.

a) The Group shall hold an Annual General Meeting (A.G.M.) in the month of

b) All members shall be given at least fourteen days notice of the A.G.M. and shall be entitled to attend and vote.

c) The business of the A.G.M. shall include:

- receiving a report from the Chairperson on the Group's activities over the year
- receiving a report from the Treasurer on the finances of the Group
- electing a new Management Committee and
- considering any other matter as may be decided.

d) At least members must be present for the Annual General Meeting and any other General Meeting to take place.

9) General Meetings.

a) There shall be 2 General Meetings (excluding the A.G.M) each year.

b) All members shall be entitled to attend and vote.

10) Special General Meeting.

A Special General Meeting may be called by the Management Committee or members to discuss an urgent matter. The Secretary shall give all members fourteen days notice of any Special General Meeting together with notice of the business to be discussed.

11) Alterations to the Constitution.

Any changes to this Constitution must be agreed by at least two-thirds of those members present and voting at any General Meeting.

12) Dissolution.

The Group may be wound up at any time if agreed by two-thirds of those members present and voting at any General Meeting. In the event of winding up any assets remaining after all debts have been paid shall be given to another Group with a similar aim.

13) Adoption of the Constitution.

Until the first A.G.M. takes place the persons whose names, addresses and signatures appear at the bottom of this document shall act as the Management Committee referred to in this constitution.

This Constitution was adopted on by

Name.....

Address

.....

Signed.....

Name.....

Address

.....

Signed.....

Name.....

Address

.....

Signed.....

draft

TENANCY AGREEMENT FOR ALLOTMENT / LEISURE GARDEN

The current form of allotment tenancy agreement issued by local councils is both incomprehensible and anachronistic. If the tenant cannot understand this document, the rules and regulations it contains cannot be expected to be observed.

If a briefer, simpler, straightforward agreement which was more closely related to the reality of allotment practice were available, tenants would be more likely to follow its rules, would have a better image of and relationship with the local authority department servicing allotments, and could even help with the resolution of misunderstandings and conflicts.

Some councils helpfully issue guides to the full agreement, summarising its contents, however, many of the conditions contained within the present document are out of date, unrealistic, unenforced or unenforcable.

The following is a draft proposal for a revised tenancy in layman's language, but which could still be legally binding.

	<u>LANDLORD</u>		<u>TENANT</u>
BETWEEN ~		AND ~	
ADDRESS ~		~	
TEL:		:	
START OF TENANCY	DATE:		
PLOT NUMBER:			
SITE:			
GROUND AREA:		square metres	
RENTAL VALUE: £			
AMENITY CHARGES: £			

[e.g. water / buildings / electricity standing charge]

[This tenancy is in accordance with the Small-holdings and Allotments Acts 1908 and 1950.]

PAYMENT The rent and amenity charges administered by the landlord should be paid in January when the bill will be sent to the tenant by post. The rent is paid three months in advance and nine months in arrears. New tenants taking on plots which are in good condition before July will be liable for the full amount of the rent in January of the following year. New tenants taking on plots either in the second half of the year or plots which are neglected or abandoned will not be billed for rent for one year after the date the tenancy commences, but may still be liable for amenity charges. Please inform the landlord of any change of address.

NON-PAYMENT If the rent remains unpaid for longer than a period of six weeks, a reminder will be issued. If the bill is still unpaid after another 4 weeks, it will be assumed that the tenant has terminated the tenancy and notice of eviction will be posted at the site of the allotment itself. After a further period of 4 weeks, the plot will be re-let to another tenant.

RESPONSIBILITIES OF THE TENANT

1. Keep all cultivable soil on the allotment free from weeds and in a good state of fertility.
2. Keep the soil free from noxious contaminants [e.g. glass, plastics, metals, asbestos etc.]
3. Keep the site access track adjacent to their plot clear of obstacles.
4. Ensure that the plot is accessible to visual inspection by maintaining hedges at no more than 1.5 m.
5. Repair and maintain any buildings erected on the plot to the highest standard possible.
6. The tenant will be liable for removing any perennials / permanent infrastructure at the termination of the tenancy.

RESTRICTIONS *The tenant is NOT permitted to:*

1. Cause any nuisance or annoyance to neighbouring plot-holders.
2. Cause excessive disruption to the natural environment either on their plot or in its environs, including water, mineral and soil extraction.
3. Use the allotment for business, trade, profit or the generation of any income except to meet costs already incurred in developing the plot.
4. Sublet the plot to another party.
5. Use the allotment as a permanent residence or place of abode.
6. Use the water supply for anything other than filling butts and containers.
7. Use hoses attached to the water supply without due attention to the needs of others.
8. Use barbed wire, razor wire or any other features which may cause severe injury.
9. Erect any new permanent structures without obtaining the written consent of the landlord's agent.
10. Light frequent or slow-burning bonfires, burn plastics and synthetic materials, or generate any other form of air pollution.

PERMITTED

1. The tenant and one or more other parties may agree to share the use of the plot by written agreement. If this is registered with the landlord's agent, a joint tenancy will be issued, providing the co-tenants supply a single contact address and agree to pay the rent in a single sum.
2. Tenants wishing to keep [or increase the number of] animals or livestock on their plot should first apply to the landlord's agent for written consent.
3. In the unfortunate event of the death of the tenant, first refusal will be offered to a relative or close friend of the tenant.

TERMINATION *Notice to Quit will be issued in the following circumstances:*

1. Failure to pay rent and/or amenity charges promptly.
2. Failure to abide by the regulations as specified in the tenancy agreement above.
3. If the land on the site is required for statutory developments authorised by the Secretary of State.

4. PROJECT RECOMMENDATIONS

STRATEGY

Community cohesion could be a major output of this project.

This study draws on and credits the blueprints and recommendations made recently by central and local government. (ref: The Future of Allotments, House of Commons 1998 and 'Growing in the Community: A Good Practice Guide for the Management of Allotments' (Local Government Association).

Both documents establish that allotments can connect with other policy agendas (education, health, care). These additional benefits are the rationale for the investment of sufficient public funds to encourage and empower the local community to.

The development of Station Road represents an opportunity to innovate and purposefully design an allotment site for the twenty-first century, integrally incorporating elements which involve the wider community.

GROWING IN THE COMMUNITY

A successful allotment project, focussing on food and related issues would undoubtedly be one of the most sustainable forms of community development possible. In this case, an opportunity exists to innovate and set an example of best practice.

Allotments run organically would have a positive impact on local people's diet and general well-being. They would provide a focus for leisure, recreation and culture.

Any project set up to promote and provide the available benefits should be capable of planning for and resourcing predicted demand for facilities and services.

Projects focussed on Local Food have links to many other areas of social policy. Food issues are embedded in other strategies and targets:- Sustainability, Health, Therapy, Community, Family – Children, Education – Schools, Biodiversity, Organic, Waste. It is possible to combine all these themes in a successful horticultural project.

Obtaining funding or revenue from each of these strands would be the key to long-term success.

FUTURE TRENDS

There is currently an upsurge in interest in allotments and food-growing activities. This trend is likely to continue to increase. The site design will include the capacity to meet the needs of these aspiring growers.

INCLUSIVITY

Allotments are typically seen as alien environments separate and separated from most folk's experience. This site will be more successful if more people can access the facility

RECRUITMENT STRATEGY.

Potential tenants and members of the site need to understand that their support will be required during the initial phase of development (6-9 months). Funding opportunities will be enhanced if there is some direct and ongoing input and commitment from the local community. Open days could be organised to improve the site.

There will be a lead-time while infrastructure improvements are being made, during which users can be recruited. They will have to understand that they may have to wait until completion of these works. A site membership scheme could be started immediately, which would give potential users a sense of connection.

NUMBERS

The site design includes much flexibility as regards the number of potential beneficiaries. This can be varied depending on the level of involvement.:

- An accountable body would require 6-12 core members.
- The developed site will provide approximately 50 individual plots.
- These plots could be subdivided into half-plots which would provide for up to 100 people.
- Shared facilities could expand the number of user groups, volunteers and visitors using the site by another 100 people per annum.

SOCIAL ENGAGEMENT

As the site develops, there will be more opportunities for engaging more people in more ways. A programme of events could be organised to engage members of the wider community in activities and experiences which would attract more interest and involvement.

YOUTH INVOLVEMENT

Visiting schools groups would introduce pupils to allotments in an educational context. Children aged 3-13 can be engaged in projects and activities, which provide practical experiences and topics for discussion. Kids could also be engaged in the project via Out-of-school clubs, Holiday activities and Play-work sessions.

TASTER SESSIONS – CONFIDENCE-BUILDING

There is a need to provide new prospective growers with an introduction to basic techniques and sharing good practices. Group sessions demonstrating what to do when would improve beginners' chances of success.

MULTICULTURAL CONNECTIONS.

Sharing food is one of the most effective ways to experience cultural diversity. In the early stages, events could be organised to introduce ethnic foods. Later on, if the population of the site is ethnically diverse, growers may produce an international and multicultural range of crops.

OUTREACH EVENTS

The project would be able to advertise and publicise itself through issues relating to food and nutrition. It could also develop a series of educational visitor attractions, such as Bird feeding station, Bird and Bat Walks, Bug Hunts, Nature-treasure Hunts.

RECRUITMENT

As many different methods of outreach and publicity should be tried as possible, to try to reach people who may be able to contribute.

è Cards

è Taster sessions

è Word of mouth

è Local Publicity

EXTERNAL NETWORKING

The project would have a requirement for networking and capacity-building both locally / regionally and with national bodies.

WEBSITE

Internet presence seems obligatory and inevitable. This would be one of many opportunities for liaison and co-operation with local training providers, such as Treeton Youth Training Project, who could contribute expertise.

REGIONAL PERSPECTIVE

South Yorkshire has been developed as a Transport Hub for central England. This is reflected in major investments in the road transport network in the area. The local region has also benefited from substantial retail and leisure developments such as the Airport and golf course, and the ongoing restoration of old industrial sites.

Obviously, major economic development is the priority. Local community development may have been secondary during this process. There is a strong argument in favour of substantial investment in projects such as the development of the allotments simply to improve the site in line with improvements to the surrounding area.

The Allotments project could be presented in this perspective with the possibility of fitting in to wider regional development (as a demonstration centre or visitor attraction).

ECO-TOURISM

Even during the preliminary stages of infrastructure development and introducing tenants, the site could be considered as part of the local Environmental strategy.

If and when it was developed to its ultimate potential, the site could even perform a role as a Visitor Attraction.

FUNDING

The Partnership is funded until December 2006.

The intention has been expressed that there will be a bid for Healthy Communities funding. All or part of the Allotments project would be appropriate for inclusion within this bid. It would be necessary to profile the project in line with the outputs expected from this funding. This would commit the project to deliver specific results, which may shape it in a certain direction.

Basic investment in Fixed Capital Infrastructure seems justified

CAPITAL / REVENUE FUNDING

The Allotments project would require capital investment as a precursor to more advanced opportunities, which would be ongoing revenue spends on paid posts (development co-ordinator and horticultural support worker).

FUNDING STRATEGY

1. It has been understood and accepted that the **timescale** for development is dictated by the seasonal cycle and the long lead times to achieve certain aims. Hence certain functions such as weed clearance should be started immediately.
2. There is an established need for **major** investment in capital infrastructure and skills to improve the chances of successful cultivation.

PATCHWORK STRATEGY

There is evidence that existing local area-based grant schemes have not been taken up, e.g. Treeton Partnership: Orgreave Community Gain (administered by Steve Ruffles).

SPONSORSHIP

Local business and industry could contribute to elements of the project. This would require the preparation of a package designating appropriate sources and elements. This route may be most appropriate for additional facilities required as the project develops.

DONATIONS IN KIND

There is potential to solicit resources direct from local business and industry. This would reflect the traditional function of allotments as a focus for local recycling and re-use.

INCOME-GENERATION

Contracting. By defining a service package and being able to predict usage, it is possible to contract with and charge individual and group users for services provided. Charges should be realistic and competitive compared with equivalent provision. It would make sense to develop 'Products' or 'Packages', designed to suit specific user groups.

SCHEDULING ACTIVITIES

A Time-table can be developed structuring activities into defined sessions:-
e.g. 2 hr sessions – 2 per day in winter / up to 4 in summer
10-12 morning / 1-3 afternoon / 4-6 afterschool / 7-9 evening (summer)

HERITAGE

The triangular site is adjacent to three phases of industrial development:

- The Glass Furnace represents the heritage of early independent pioneers.
- The disused Railway track and Marshalling yard recall the days of corporate state organisation.
- The Parkway now dominates the site as the transport system of modern era.

LOCAL

Although the development would primarily benefit people from the local area, Catcliffe and Brinsworth, wider participation from more diverse communities outside the immediate area should be encouraged. As well as increasing the likelihood of meeting funding criteria, greater diversity would also enhance the cultural potential of the site.

MEMORY.

Local attitudes can partly be understood as an expression of deeply engrained pride and a desire for self-reliance.

SOCIAL INDICATORS

The population of the area is widely described as "dormant".

Community Leaders have been apparent, but are operating within established and limited spheres.

"Cat and Brin"

- Brinsworth is perceived to be more vibrant than Catcliffe, as is apparent if judged by Size / Housing Stock / Commercial activity / Location / Transport.
- Whereas Brinsworth conforms to the pattern of a 'township', Catcliffe is, by comparison, a village.
- For the allotment site, this may mean that there may be disproportionately more people who travel from Brinsworth to access the facility.
- This could also bring a flow of investment of resources and skills

FUTURE TRENDS

Geographical proximity to areas of greater economic affluence has already started to have a knock-on effect in terms of rising house prices.

DEMONSTRATION PLOT

The Access Beds and potentially other plots could be run as Demonstration plots to establish positive horticultural role models and traditions. For many novice and inexperienced growers there will be a need to set examples of good practice. Over time there will also be a weaning process, whereby individuals will gain sufficient experience and confidence to pass on skills to other beginners.

If this Demonstration cultivation can fulfil a nursery function – raising transplants for distribution around site – it will provide added experiential value and sense of achievement.

Employment options - Job Descriptions

SITE DEVELOPMENT CO-ORDINATOR (6-9 months)

Supervise infrastructure installation.

HORTICULTURAL SUPPORT WORKER (12 months)

Demonstrate good practice and develop skills and capacity.

Organise Access Beds and Polytunnel for Visiting Groups

Liase with and support individual Tenants

Nursery and propagation to supply site.

HORTICULTURAL THERAPY CO-ORDINATOR (ongoing)

Liase with visiting user groups (care workers and clients)

HORTI-CARE workers.

Potential for members to train and qualify for work supporting groups and individuals.

HEALTH AND SAFETY

Projects addressing the health and well-being of users should perceive the necessity of protecting them from negative impacts on health, such as excessive ultraviolet exposure or over-exertion injuries.

SUPERVISION POLICY

Any client, carer, user or volunteer will require horticultural support and supervision. Responsibility for their daily, defined or stated care needs should reside with their care provider. In practice this would mean that clients would remain the responsibility of their regular carers on site. Effectively and in contractual terms, the allotment project would provide a facility and service activities but would not assume responsibility for the individuals participating.

Useful Contacts – information and support

Henry Doubleday Research Association	www.gardenorganic.org.uk
Soil Association – Certification	www.soilassociation.org/certification
Soil Association Local Food Links	www.soilassociation.org/web/sa/saweb.nsf/GetInvolved/setup
Compost Association	www.compost-uk.org.uk
Community Compost Network	www.communitycompost.org
SUSTAIN – food poverty network	www.sustainweb.org
THRIVE – Therapeutic Horticulture Network	www.thrive.org.uk
Growing Together: Therapeutic Gardening research	www.growingtogether.org.uk
Good Gardeners' Association	www.goodgardeners.org.uk
Permaculture Association	www.permaculture.org.uk
Plants for a Future	www.pfaf.org
Federation of Community Gardens and City Farms	www.farmgarden.org.uk
Cultivations	www.cultivations.co.uk
VOHAN	www.veganorganic.net
Eliot Coleman	www.fourseasonfarm.com
Biodynamic Agriculture Association	www.biodynamic.org.uk
National Society of Allotment and Leisure Gardeners	www.nsalg.org.uk

Appendices **PLANTING FRUIT AND PERENNIAL CROPS**

The idea of planting some form of fruiting tree appeals to everybody [or at least the vision of plucking ripe fruits from a tree you've planted yourself]. Whilst wishing to encourage more fruit-planting wherever possible, care must be taken to ensure a successful result. What follows is an attempt to comprehensively describe all the actions necessary to increase the plant's chances of attaining a productive, healthy and long life. This information has been compiled from many sources and suggestions, combined with years of practical experience.

Purchase **OPEN** or **FIELD-GROWN** stock, which will have a natural root-form, in the **DORMANT** season, rather than **POT OR CONTAINER-GROWN**, which are more likely to have ingrown and restricted roots and may have spent too long in too small a pot. If you can only obtain potted stock, ensure that the **ROOTBALL** is thoroughly disentangled when the plant is transplanted or potted up.

YOUNGER plants [1-3 years] will probably become re-established in their final positions more quickly than older [3-5 year old]. Nursery growing conditions will have been as close to perfect as possible, to ensure maximum growth in the stock offered for sale. Care should be taken to try to ensure that these high levels of fertility are maintained during the first 5-7 years while the tree is becoming established in its final position. Unimproved soil will check the tree's growth in its formative years, postponing its full establishment and cropping.

SOIL IMPROVEMENT should aim to allow the plant to fulfill its prodigious growth potential, first by remedial, mechanical addition of enough bulky organic matter to render a sufficient area and depth of soil readily penetrable by the plant's roots and secondly by the addition of sufficient concentrated long-term, slow-release fertilisers to allow the tree to generate a sturdy and balanced structure of healthy wood which will be capable of bearing the weight of many years' fruit crop. Imagine that each tree may produce hundreds of pounds of fruit annually when it is mature. The future return justifies a generous investment to help guarantee that outcome. Spend at least the value of the plant on feeding its formative growth with bulky organic matter and concentrated fertilisers. Once fully established, the plant will be capable of exploiting all the indigenous, unimproved soil available to it.

SPACING. The size of the mature tree is dependant on the vigour of the rootstock which the fruiting wood has been grafted onto. The full extent of growth of various rootstocks vertically and laterally are as follows; dwarf 5-10 ft, bush/semi-dwarf 10-15 ft, half-standard 15-20 ft, full standard 25 ft

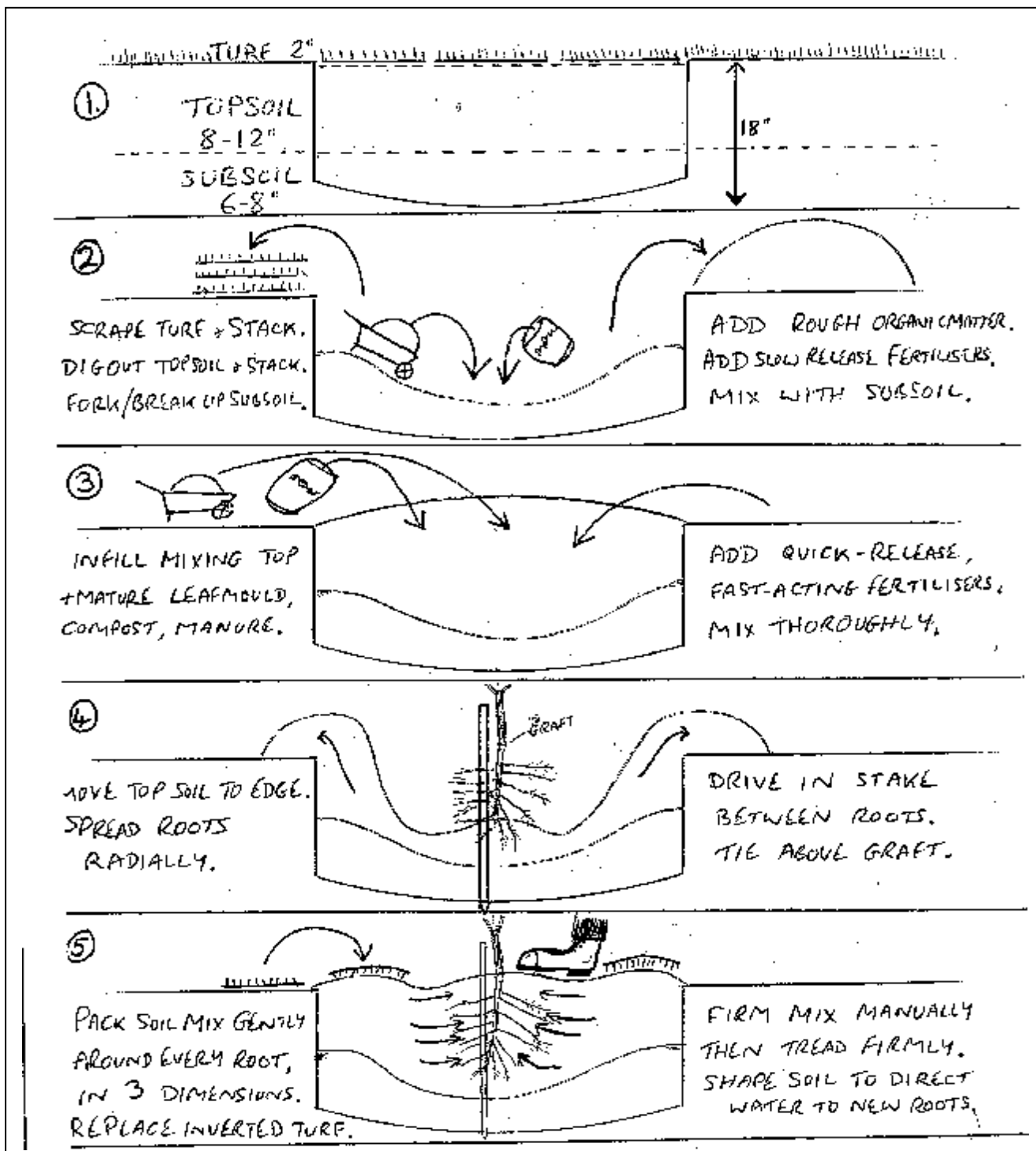
AFTERCARE. The purpose of following the complete instructions for planting is so that the tree can be provided with all the conditions needed to succeed with as little ongoing intervention as possible. Problems later in the life of perennial fruiting crops can most often be directly attributed to insufficient soil preparation and care when planting.

WATERING. Copious amounts of organic matter in the vicinity of the young plant's roots will help to guarantee that it does not die even during prolonged drought. However, an extended period of dry weather during the tree's first period of growth in its new situation, during the hot, long days of late spring and summer [May to August], could severely restrict growth and delay the young plant's establishment until the following year. If drought lasts for more than four weeks during this period, water thoroughly [50-100 L] and repeat every fortnight.

MULCHING AND WEEDING. In the first few years of a tree's life, its root system will extend outwards in the soil at the rate of about 15cm/6 inches in each direction each year. Care should be taken to ensure that weeds do not out-compete the tree's roots for moisture and nutrients over the whole rooting area especially at the drip-line, which corresponds to the outer edge of the

rooting circle, where most of the tree's fibrous feeder roots are concentrated. Young plants should only be mulched with permeable materials which will readily allow rainwater to penetrate straight through to the roots.

PRUNING. During the first 5 years of the tree's life, it is possible to form the skeleton or superstructure which could bear the weight of crops for many decades into the future. Careful attention to the removal of any small pieces of dead, diseased and damaged wood will help to reduce the chances of minor ailments developing into major problems. Try to read the present shape and habit of the tree and allow its natural form to be expressed. Assess its current shape first in the three dimensions of space and then project this forwards in time to what it will develop into in one, five and ten years. Try to reduce the tree's vigorous, leaf and branch, structural growth by shortening extension growth to allow fruiting on mature wood which is strong enough to bear the weight of fruit. Plums and cherries should only be pruned during April to July, when the sap is flowing strongly enough to heal wounds quickly.



FRUIT - STEP-BY STEP DIRECTIONS / PLANTING SEQUENCE (Please refer to diagram)

1. Dig a hole 3-4 ft [1m+] wide & 12-18 inches [30-40cm] deep. Put topsoil into a mound on one side.
2. Break up the subsoil in the bottom of the hole with a fork to ensure good drainage under where the roots will grow and remove any large stones or obstacles to root growth.
3. Fill half the hole with rough organic matter and fertilisers that will take 3-5 years to break down. Using a fork, first mix with some subsoil and then a couple of spadefulls of topsoil.
4. Overfill the rest of the hole with more mature organic matter and short-term, soluble fertilisers [such as aged compost and seaweed]. Stir the mix with a fork again bringing up a small proportion of the rougher lower half. Add more topsoil until there is 50% soil in the mix.
This completes the radical preparation of the soil to ensure the plant thrives in its first few years and forms a strong and healthy structure. This operation can be carried out during the longer days and better weather earlier in the year [September-November], allowing the additives to settle and be consolidated, and permitting much quicker planting if required during the dormant season [Dec-Feb].
5. Dig a hole into the mixture 18 "/40cm wide and deep, larger if the roots are up to a foot [30 cm] long.
6. Form a mound of improved soil at the bottom of the hole.
7. Spread out the roots in a circle in all directions and place it gently onto the mound.
8. Check that the graft point is 2"[5cm] above ground level to stop the fruiting stock from rooting and if possible that the graft wound faces towards the sun [south] so that it stays dry and heals over.
9. Place the stake between the roots so that it meets the tree without disrupting its branches and supports it vertically. Holding the tree away, push the stake into the subsoil and drive it in a further 6-8"/15-20cm with a lump-hammer. Check that the tree and stake are still positioned correctly and adjust either as necessary.
Except in especially exposed, windy sites or on light soils, using extremely dwarf rootstock, a stake that protrudes 12"/30cm above soil level will be sufficient to protect the tree, without making it dependant on support.
10. Tie the tree and stake together loosely at the point where they touch making a figure of eight between the two, using strips of rubber [1x12"/3x30cm] or other soft, elastic, non-synthetic materials.
11. Tease out the lowest main roots from the root-ball and spread them radially to cover as much area available as possible. Remove any broken roots. Settle the main and/or fibrous roots into the mix pointing outwards and hold them in place with improved soil mix. Firm down gently with the knuckles or palms of your hands. Aim to guarantee maximum contact between the roots and soil so that the plant can draw on the greatest area possible as soon as it starts to grow in the spring.
12. Identify and separate roots growing further up the taproot and attempt to create a second circle of roots 2"/5cm above the first. Vigorous rootstocks may have enough growth to permit a third circular tier or level of roots to be arranged.
13. Cover the highest roots with 4"/10cm soil mix and press firmly with your fists. Firm pressure minimises the danger of leaving an air or water pocket near the roots which could damage them or even make the tree unstable. The further away from the plant's stem, the harder the pressure can be, since the mix acts as a buffer protecting the roots from damage.
14. Loosen and stretch and tie the rubber so that the stake is firmly supporting the tree.
15. Spade another 6"/15cm of mix and topsoil around the tree and tread down to form a slight mound all around. With your toe pointing towards the trunk, stamp the ground down with your full weight, so that your heels create a circle of well-compressed soil 12"/30cm radius around the tree.
16. Fork over a circle of topsoil outside the compressed soil to bring the whole area back to level.
17. A second, less substantial stake [such as a simple bamboo cane tied with soft string] can be used to supplement the ground-anchor stake whenever a plant is especially tall or on an especially windy site. On well-protected sites, the anchor-stake can be omitted and the cane used for the first year only.

Appendix

COMPOSTING

BULKY ORGANIC MATTER (equal proportions of...)

1. Retail Vegetable Waste /
2. Crop Residues /
3. Cattle Manure

SMALL AMOUNTS

1. Hay / Straw
2. Paper / Card
3. Nettles / Comfrey
4. Annual Weeds / Perennial Weed Tops Not Roots

ADDITIVES

1. Seaweed Meal
2. Volcanic Rock Dust
3. Magnesium Lime
4. Compost Activator (Urine 9% Nitrogen)

INNOCULANTS

1. Mature Compost (Micro-Organisms / Eisenia Foetida + Eggs)
2. Loam / Topsoil (Micro-Organisms)
3. Biodynamic Preparations (Homeopathic Doses)

SITE

Right-angled walls / boarding + temporary dividing boards (pallets etc.)
Soil or loose brick floor (drainage + firm chopping surface)

Heap supported on three sides / front open for loading

Base area = 7 ft x 7 ft / 2 m x 2 m Height = 7 ft / 2 m

Chopping vegetable waste using sharp spades. Especially matter which will regrow (onions /beetroots etc.), resist breakdown (citrus) or is woody (brassica stalks / avocado and mango seed).

STACKING

- Bottom layer spongy, dry material (e.g. hay / straw): to soak up leachate + firm stems to support material above and allow air to be drawn into the base of the heap
- Alternating layers of bulky organic matter (3-6 inch / 10-15 cm) + additives.
- Insulate raw material (veg/hay) by putting manure at the edges of the heap.
- Flatten each layer so that it is horizontal.
- Firm up front to build a near-vertical face.
- Add intractable materials to upper layers, the hottest part of the heap.
- Top dome-shaped (parabolic) so that condensation evaporates.
- Capping top with soil to insulate and inoculate.

COVERINGS:

1. Soil, Paper or Card to soak up water vapour
2. Plastic sheet to retain moisture and ammonia gas
3. Carpet to insulate and retain heat

TURNING: INVERT AND RESTRUCTURE INSIDE-OUT AND UPSIDE-DOWN.

FIRST TURN (using forks) after 2-4 weeks. Heap will reheat to 40 °c

SECOND TURN (using spades) to chop through heap in 3 inch / 10 cm slices after 4-6 weeks. Less heat / maturation phase / inoculate with mature compost

ARRANGMENT OF COMPOST AREA: Heaps next to each other to permit worms to migrate from mature to recent heaps.

STOCKPILING: A backlog of heaps left to fully mature for 6-9 months+.

TYPICAL PROBLEMS FOR BEGINNERS:

1. **SIZE:** Insufficient material piled at the same time . If the volume of material is less than 1 m³, there will not be sufficient critical mass to generate the chain reactions of microbes which produce heat.
2. **BALANCE OF INGREDIENTS:** Excess amounts one type of material in initial mix.
3. **TURNING:** To extend thermophilic breakdown and homogenise ingredients.
4. **BOXES:** Sides too open allows wind to dry out material at edges.
5. **COVERINGS:** Must be sufficient to retain heat and moisture.

COMPOST CONCEPTS

The composting process can be understood as two related but distinct processes:

1. DECOMPOSITION BY MICRO-ORGANISMS 6-8 weeks

Bacteria, fungi, yeasts, algae, protozoa and actinomycetes break down the raw materials and feed off each other. Successive flushes of micro-organisms spread through the heap. Heat is produced in the insulated environment of the heap by thermophilic bacteria.

2. RECOMPOSITION BY MACRO-ORGANISMS 3-9 months

The longer stage of maturation by worms digesting the material broken down by micro-organisms and forming it into improved, stable humus (vermicomposting).

THE CARBON TO NITROGEN RATIO.

Chemically, the composting process can be understood as the combining of carbon and nitrogen to form complex carbohydrate proteins which will bond onto clay particles to form humus. Ideally, the initial mix should contain about 30 times more carbon than nitrogen. Mature compost will end up with 10 times more carbon than nitrogen.

MATURE COMPOST is DARK, CRUMBLY, SWEET-SMELLING.

HUMUS MOLECULES can hold ten times more water than an equal amount of sand.

USES (at stages of maturity):

3 MONTHS (after Decomposition) --- MULCH / SURFACE DRESSING / DON'T DIG IN

6 MONTHS (Recomposition beginning) --- INCORPORATE INTO SOIL

9-12 MONTHS (after Vermicomposting) --- ANY USE INCLUDING POTTING MIXES

APPLICATION RATES: 5-10% OF SOIL VOLUME / 5-10 METRIC TONNES PER ACRE, depending on crop and soil quality. The more mature a compost is, the more stable humus it will contain and the easier its fertility will be taken up by plants' roots.

MICRO-ORGANISMS. Populations of several billion per teaspoonful.

Some soil bacteria (**NITROBACTERS**) specialise in digesting nitrogen. Topsoil or loam can be used to deodorise boots and bins covered in smelly, slimy material.

PHAGES viruses which consume bacteria. Used to treat infections in cases of antibiotic resistance.

SEASONS. Spring and autumn (the equinoxes) are better times for composting than summer and winter (the solstices) because the temperature is neither too hot nor too cold, and the weather is neither too wet nor dry. During March - April and September - October, composting will be faster and more vigorous. Airborne spores which also inoculate composts are more prevalent in the autumn.

BALANCE. The composter should try to combine the greatest diversity of inputs possible to maximise the health and vigour of the compost and the growth-potential and flavour of the plants it fertilises. If the initial combination of materials is balanced, the whole process will be optimal. One way to conceive of this is to try to provide all that is needed mechanically for the process: aeration or ventilation, moisture-cycling by evaporation and condensation and insulation to retain heat. This could also be thought of as a balance between the elemental forces: fire, earth, air and water; or between the four humors: hot, dry, cold and wet. With this in mind, a judgment can be made about how varying inputs will affect the mix. For instance, different manures can be categorised according to whether they are hot and dry (like strawy horse manure), cold and wet (pig / human) or balanced (cattle).

BIODYNAMICS. A system of ultra-organic horticulture and agriculture which acknowledges the existence of subtle natural energies and advocates sensitive cultivation in harmony with these influences. Planting with the moon (sow seed before full / transplants or cuttings before dark). Preparations used to inoculate compost heaps contain homeopathic doses of yarrow, chamomile, nettles, oakbark, dandelion and valerian, which improve the environment for micro-organisms.

ALCHEMY. Composting has often been described as an alchemical process of converting base materials into higher, more valuable forms. It can be used to transmute substandard, diseased, inorganic and contaminated matter into organic-standard humus to feed and improve the health of soils, the plants that grow in them, and in turn, the humans that eat their produce.