

## 02. Church Fenton



# 02. Church Fenton



## a domestic garden

### context

A friend and his partner commissioned me to produce a design for their back garden. They were both quite new to gardening and wanted a basic framework putting in place that would allow them to learn to grow fruit and vegetables at their own pace. They also wanted the garden to be attractive, and provide space their 7-year-old daughter and her friends to play.

# survey

## Client interview

**Address:** Fieldside Court, Church Fenton, Tadcaster, North Yorks

**Property size:** 3 bed semi; 66.5m<sup>2</sup> garden

**Number of people on site (typical/average):** usually 3, sometimes 4.

**Lifestyle/ethos:** keen to find out more about gardening

**Eating habits:** Omnivorous

**Age ranges:** 7 – 33

**Budget:** £500

**Site tenure:** Freehold

**Restrictions on land use (covenants etc):** None known

**Potential catastrophes (vandalism, flooding etc):** None known

**Level/type of crop (or other yield) required:** Small amount of fruit and vegetables

**Existing energy efficiency measures & energy usage:** New build house, so compliant with latest building regs. No current interest in uprating the insulation or installing renewable energy systems.

**Client wants & needs:** The client would like to start learning how to grow fruit and vegetables. They are not particularly confident about where to start, and feel that they have no DIY skills. They want to retain plenty of space for children to play, an area to dry washing; outdoor eating space. They also want to retain existing rosemary bush. Leave space in beds for ornamental plants.



existing raspberries & rosemary



# survey

## Site summary

The site is the back garden of a new-build semi-detached house in the small village of Church Fenton. The garden is 9.5m long x 7m wide, to the west of the house. There is a slight slope down to the west, away from the house.

## Climate

Cool temperate, maritime.

USDA hardiness zone 8

Rural location (no urban heat island effect)

## Landscape context

The surrounding landscape is best characterised as fen land, or drained marsh and is flat for several miles in all directions. However, with respect to the prevailing winds, the site is slightly in the lee of an embankment that carries the main road to a bridge over the nearby railway (see above), as well as several houses to the South West. The majority of the surrounding land is given over to arable crop production.



# survey

## Soil

the soil is a fertile clay loam with a pH of around 6.5 – 7.0

## Water

average annual rainfall: 603mm.\*

approximate Garden area: 66.5m<sup>2</sup>

approximate Garage roof area: 10m<sup>2</sup>

approximate House roof area : 20m<sup>2</sup>

### Total annual rainfall resource:

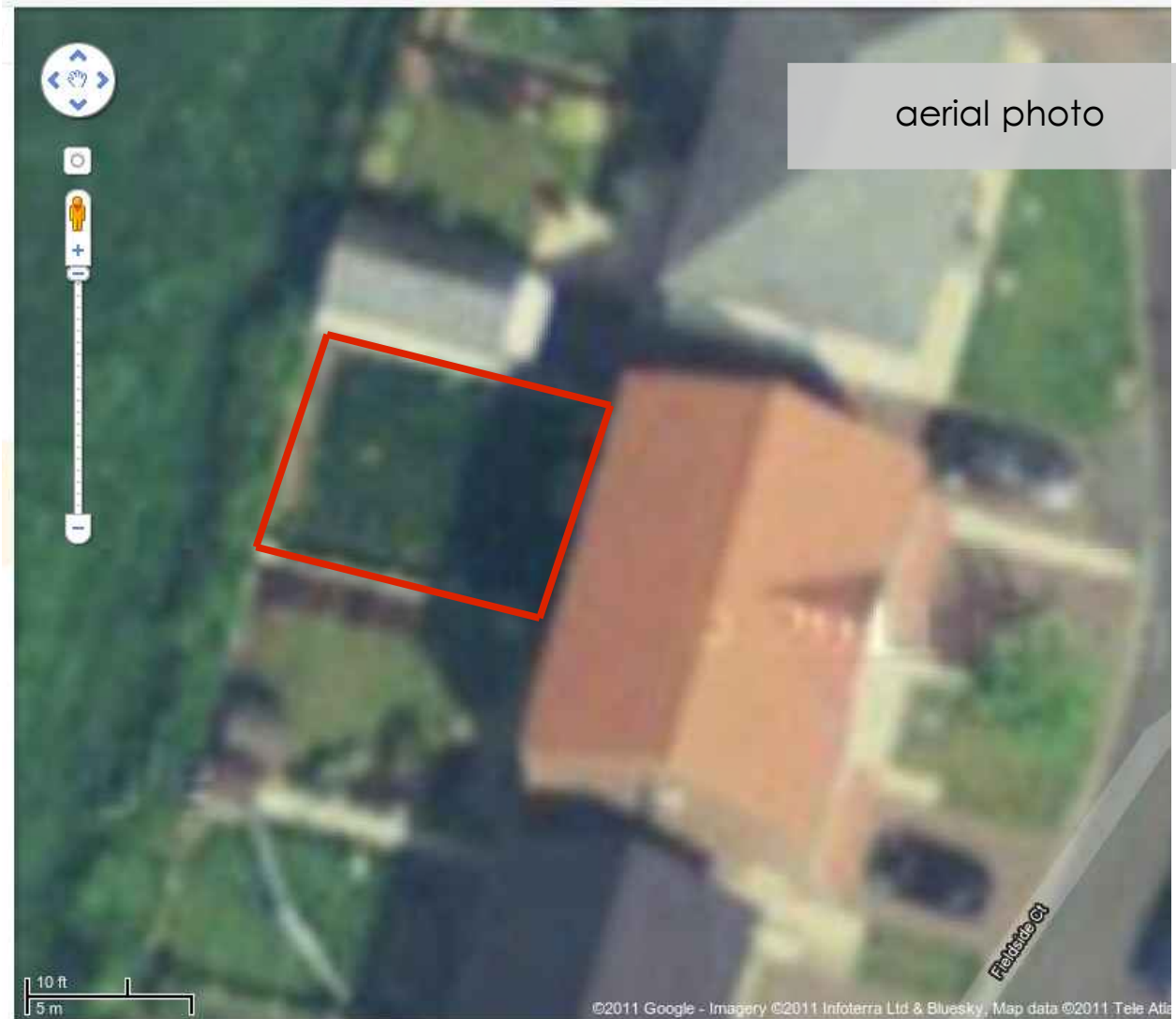
$96.5 \times 603 = 58,189.5$  litres

outside tap in footpath to north elevation of house.

\* data from RAF Church Fenton weather station

## Other

There is a mixed, native hedge (mainly hawthorn) beyond the western boundary fence



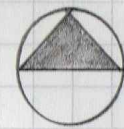
aerial photo

## Existing elements on site

Plants	Animals	Structures	Events
rosemary	wild birds	house	kids play
raspberry canes	neighbours' cats	garage	clothes drying
lawn			outdoor dining



# survey



1:50

GARAGE

SOFT FRUIT

ROSEMARY

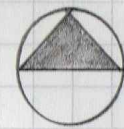
OUTSIDE TAP →

LAWN

HOUSE



# sectors



sunrise,  
summer solstice

1:50

OUTSIDE TAP →

HOUSE

ROSEMARY

GARAGE

SOFT FRUIT

LAWN

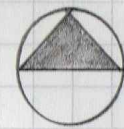
7 sunset, winter solstice

sunrise, winter solstice

sectors - JA - Feb 2009



# sectors



1:50

sunrise,  
summer solstice



cold  
winter  
winds

OUTSIDE TAP →

GARAGE

SOFT FRUIT

ROSEMARY

LAWN

HOUSE

sunset,  
summer  
solstice



prevailing  
wind



sunset, winter solstice

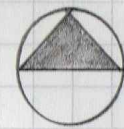
sunrise, winter solstice



sectors - JA - Feb 2009



# sectors



1:50

sunrise, summer solstice



cold winter winds



OUTSIDE TAP →

GARAGE

SOFT FRUIT

ROSEMARY

LAWN

HOUSE

Water via downpipes from garage & house & external tap

sunset, summer solstice



prevailing wind



sunset, winter solstice

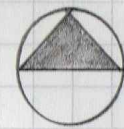


sunrise, winter solstice





# sectors



1:50

sunrise, summer solstice



cold winter winds



GARAGE

SOFT FRUIT

ROSEMARY

OUTSIDE TAP →

sunset, summer solstice



LAWN

Main circulation routes  
HOUSE

Water via downpipes from garage & house & external tap

Existing rotary clothes dryer

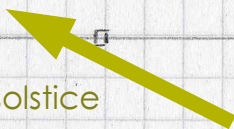
prevailing wind



sunset, winter solstice

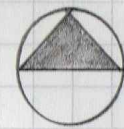


sunrise, winter solstice





# sectors



1:50

sunrise, summer solstice



cold winter winds



GARAGE

Warm microclimate along south-facing wall

ROSEMARY

OUTSIDE TAP →

sunset, summer solstice



Main circulation routes  
HOUSE

LAWN

Water via downpipes from garage & house & external tap

Shady, cool microclimate.

Existing rotary clothes dryer

prevailing wind



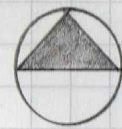
Very shady area

sunset, winter solstice

sunrise, winter solstice



# zones



1:50

GARAGE

SOFT FRUIT

ROSEMARY

OUTSIDE TAP →

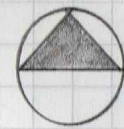
LAWN

Zone 0



# zones

GARAGE



1:50

OUTSIDE TAP →

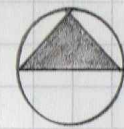
Zone 1

Zone 0

The garden is small enough for all of it to be thought of as zone 1: intensively managed crops such as annual vegetables, trained forms, herbs etc.

# design

GARAGE



1:50

OUTSIDE TAP →

Food growing  
& ornamentals

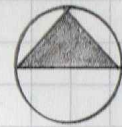
Sitting room

Utility room



# design

GARAGE



1:50

OUTSIDE TAP →

Food growing  
& ornamentals

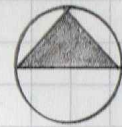
Children's play

Sitting room

Utility room

# design

GARAGE



1:50

OUTSIDE TAP →

Food growing  
& ornamentals

Children's play

Clothes drying

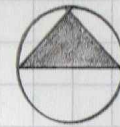
Sitting room

Utility room



# design

GARAGE



1:50

OUTSIDE TAP →

Food growing  
& ornamentals

Children's play

Outdoor dining

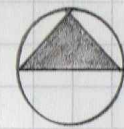
Sitting room

Clothes drying

Utility room

# design

GARAGE



1:50

The kitchen and dining room are on the first floor of the house, so the far end of the garden can be seen more easily than the area immediately adjacent to the house from the kitchen sink, improving 'passive surveillance' of the growing area

OUTSIDE TAP →

Food growing  
& ornamentals

Children's play

Outdoor dining

Sitting room

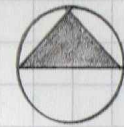
Clothes drying

Utility room



# design

GARAGE



1:50

OUTSIDE TAP →

The kitchen and dining room are on the first floor of the house, so the far end of the garden can be seen more easily than the area immediately adjacent to the house from the kitchen sink, improving 'passive surveillance' of the growing area

Food growing & ornamentals

Children's play

Outdoor dining

Sitting room

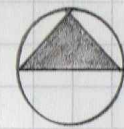
Existing locations of patio and rotary clothes dryer are appropriate: close to functionally linked areas of the house, saving time and energy

Clothes drying

Utility room

# design

GARAGE



1:50

OUTSIDE TAP →

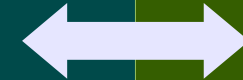
The kitchen and dining room are on the first floor of the house, so the far end of the garden can be seen more easily than the area immediately adjacent to the house from the kitchen sink, improving 'passive surveillance' of the growing area

Food growing & ornamentals

The main functional areas need not be seen as mutually exclusive. For example, growing food could incorporate an element of child's play. This could yield the benefit of teaching the clients' daughter about where food comes from as well as developing her food growing knowledge & skills etc.

Children's play

Outdoor dining



Sitting room

Existing locations of patio and rotary clothes dryer are appropriate: close to functionally linked areas of the house, saving time and energy

Clothes drying

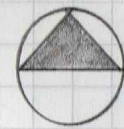


Utility room



# design

GARAGE



1:50



Retain rosemary

OUTSIDE TAP →

Children's play

Outdoor dining

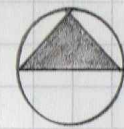
Sitting room

Clothes drying

Utility room

# design

GARAGE



1:50



Retain rosemary

OUTSIDE TAP →



Sitting room

Outdoor dining

Children's play

Clothes drying

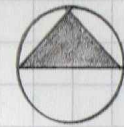
Utility room

Move existing raspberries against hit-and-miss fence

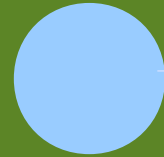


# design

GARAGE



1:50



Retain rosemary

OUTSIDE TAP →

Raised veg bed  
1m x 1m

Raised veg bed  
1m x 1m

Raised veg bed  
1m x 1m

Children's play

Clothes drying

Outdoor dining

Sitting room

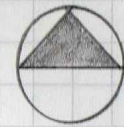
Utility room

Move existing raspberries against hit-and-miss fence

detailed design – JA – Feb 2009

# design

GARAGE



1:50

Mini greenhouse

Retain rosemary

OUTSIDE TAP →

Raised veg bed  
1m x 1m

Raised veg bed  
1m x 1m

Raised veg bed  
1m x 1m

Children's play

Outdoor dining

Sitting room

Clothes drying

Utility room

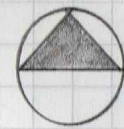
Move existing raspberries against hit-and-miss fence

detailed design – JA – Feb 2009

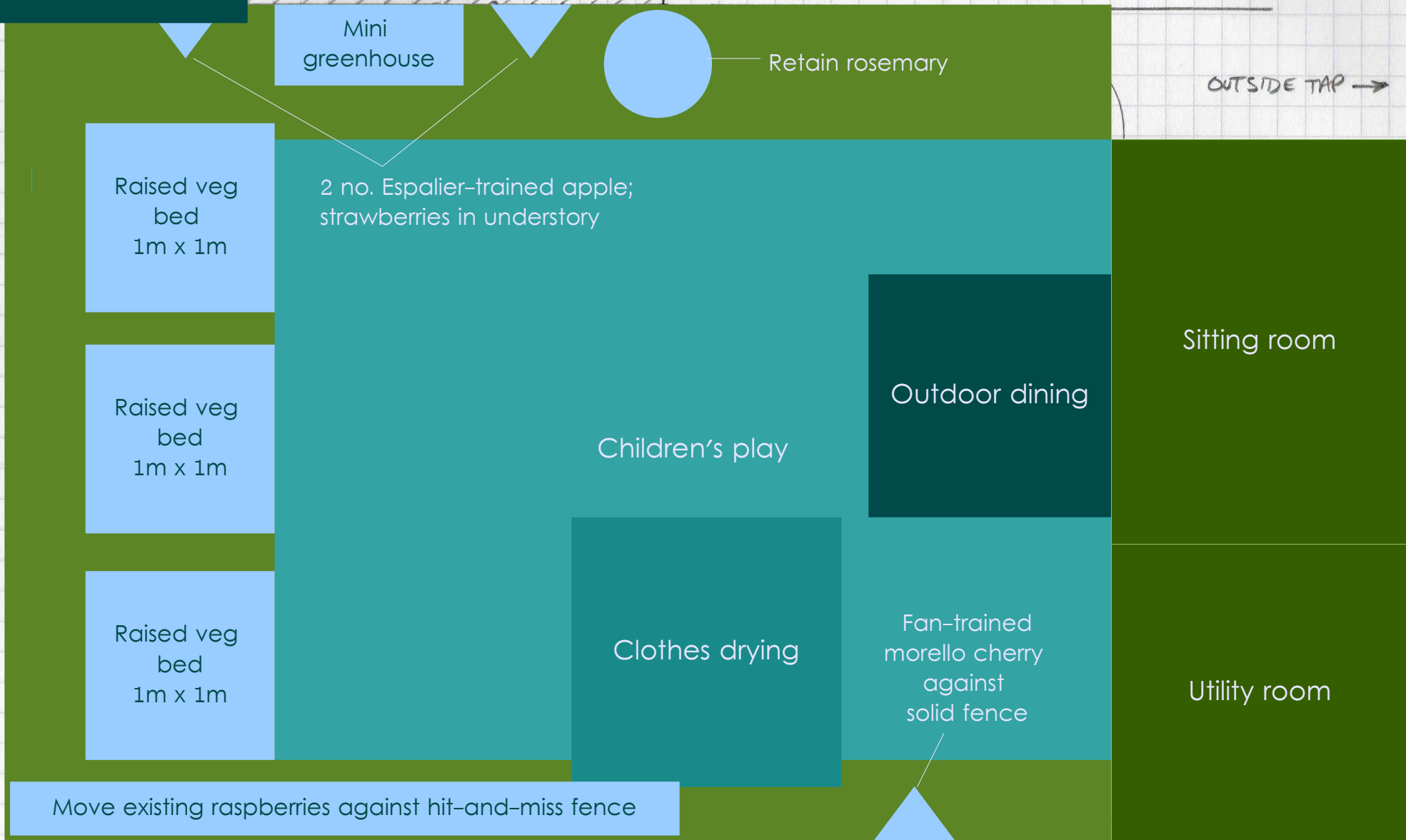


# design

GARAGE



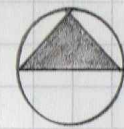
1:50



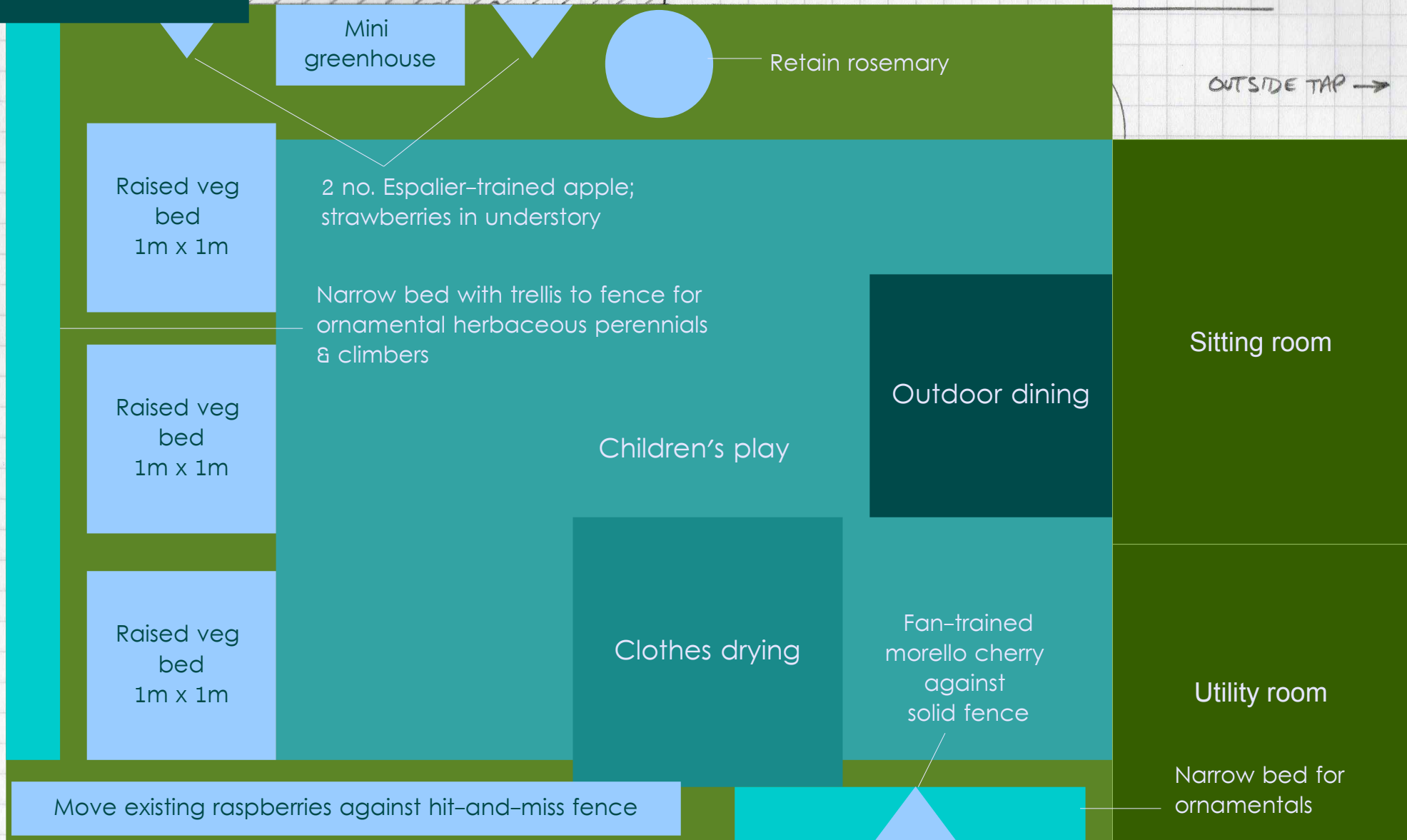
detailed design – JA – Feb 2009

# design

GARAGE



1:50



Mini greenhouse

Retain rosemary

OUTSIDE TAP ->

Raised veg bed  
1m x 1m

2 no. Espalier-trained apple;  
strawberries in understory

Narrow bed with trellis to fence for  
ornamental herbaceous perennials  
& climbers

Raised veg bed  
1m x 1m

Outdoor dining

Sitting room

Children's play

Raised veg bed  
1m x 1m

Clothes drying

Fan-trained morello cherry  
against solid fence

Utility room

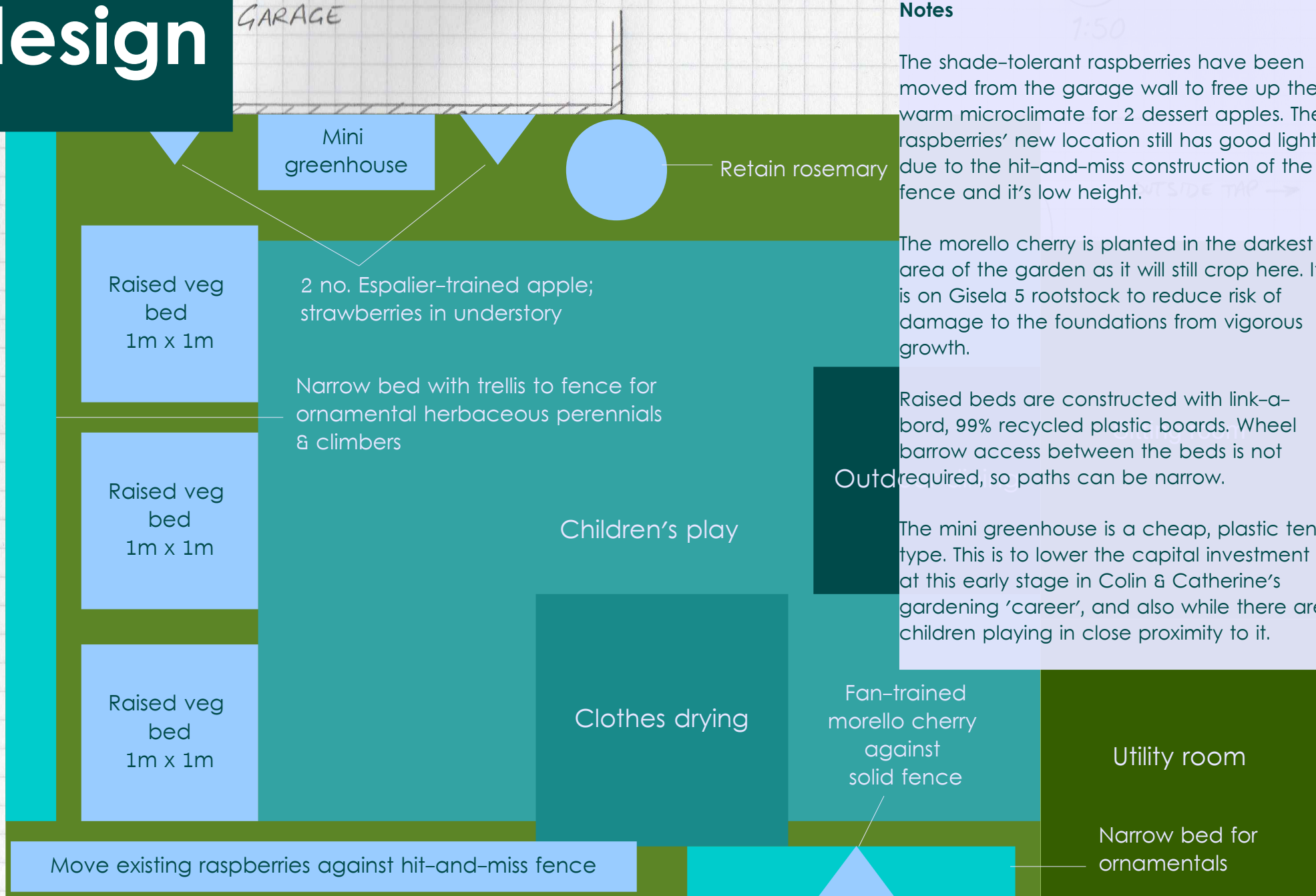
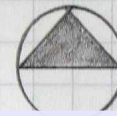
Move existing raspberries against hit-and-miss fence

Narrow bed for ornamentals



# design

GARAGE



## Notes

7:50

The shade-tolerant raspberries have been moved from the garage wall to free up the warm microclimate for 2 dessert apples. The raspberries' new location still has good light due to the hit-and-miss construction of the fence and it's low height.

The morello cherry is planted in the darkest area of the garden as it will still crop here. It is on Gisela 5 rootstock to reduce risk of damage to the foundations from vigorous growth.

Raised beds are constructed with link-a-board, 99% recycled plastic boards. Wheelbarrow access between the beds is not required, so paths can be narrow.

The mini greenhouse is a cheap, plastic tent type. This is to lower the capital investment at this early stage in Colin & Catherine's gardening 'career', and also while there are children playing in close proximity to it.

Outdoor

# implementation

costings

No.	Description	Price	Line total
1.00	Walk-in greenhouse & carriage	35.04	35.04
1.00	Apple 'Greensleeves' tree (maiden)	11.50	11.50
1.00	Apple 'kidd's orange' tree (maiden)	12.00	12.00
1.00	Cherry morello tree (maiden)	11.50	11.50
1.00	carriage (trees)	10.00	10.00
1.00	50L bag farmyard manure	5.99	5.99
1.00	Packet chilli pepper 'hot stuff' seeds	3.30	3.30
1.00	Packet sweet pepper 'worldbeater' seeds	1.55	1.55
1.00	Packet tomato 'moneymaker' seeds	1.55	1.55
1.00	Link-a-Bord	50.80	50.80
2.00	Tree stakes	5.00	10.00
2.00	Tree ties	1.50	3.00
1.00	Compost for raised beds	25.00	25.00
12.00	Vine eyes	0.50	6.00
1.00	Roll of garden wire	3.00	3.00
18.00	Labour	11.00	198.00
<b>Total</b>			<b>388.23</b>



# implementation

schedule of works

## Late winter '09

1. Dig trench along southern boundary fence to transplant raspberries into.
2. Incorporate some well-rotted manure into trench.
3. Prune & transplant raspberries
4. Install support posts & wires for raspberries
5. Widen/deepen holes to plant apple trees in former location of raspberries
6. Incorporate well-rotted manure into holes
7. Plant & stake apple trees.
8. Install vine-eyes & wires in garage wall to train apples as espaliers
9. Install vine-eyes & wires to southern boundary fence to train morello cherry as a fan
10. Dig hole & incorporate well-rotted manure for cherry
11. Plant & tie in cherry.

## Spring '09

1. Install greenhouse (lightweight, plastic construction, so should be installed after likelihood of severe winter gales has reduced, and dismantled and packed away in Autumn).
2. Install Link-a-bord raised beds
3. Fill Link-a-bord beds with compost
4. Client to sow vegetable seeds, plant out etc.



# maintenance

## Annual maintenance jobs

(illustrated instructions of tasks were supplied to the client)

### Winter

Perform formative pruning of all trees in winter  
Add vine-eyes and wires as required

### Spring

Mulch around apple trees with compost in spring  
Incorporate compost and fertilizer to raised beds in spring

### Summer

Cut back fruited summer-fruited raspberries

### Autumn

Cut back autumn-fruited raspberries to the ground after fruiting

Perform annual vegetable operations as and when required throughout the growing season

before





# evaluation

after



## Evaluation visit: August '10

I revisited the garden 18 months after the implementation to evaluate it, and to see if Colin and Catherine needed any follow-up support. At this point the garden was looking good; the trees had established themselves well, Colin & Catherine had been gardening keenly and had already harvested annual vegetables from the raised beds. The raspberries were healthy after their move and the strawberries were doing well. Unfortunately the plastic greenhouse didn't survive the winter; it was still up when the first storm of the previous winter had struck, and had been badly damaged. Colin had replaced it with a cold frame.

# evaluation

after



View towards western boundary of the garden



# evaluation

after



Raised bed, espalier-trained apples, greenhouse replaced by cold-frame, strawberries



# evaluation

after



Fan-trained morello cherry

## Application of permaculture ethics

### People Care

- Trying to balance the diverse needs of all the users of the garden.
- Listening to the brief carefully
- Supporting a family to take up gardening and growing some of their own food

### Earth Care

- Keeping the area of annual vegetable production small reduces the need to turn the soil and deplete it.
- A good proportion of perennials means slightly lower inputs need to be imported to site.

### Setting Limits to Consumption & Redistributing Surplus

- By supporting people to produce some of their own food, their consumption of industrial food is limited slightly.
- Hopefully in good years, surplus apples can be shared with Colin & Catherine's neighbours
- Using the design as a teaching aid helps to maximise the 'surplus' from the design(i.e. my learning) and make it available to others.



# evaluation

principles

## Application of permaculture principles

Observe & Interact	Survey; client interview; sector analysis.
Catch & Store Energy	Using the warm microclimate of the garage wall for the greenhouse and espalier trained apple trees.
Obtain a Yield	Annual veg harvested in year 1
Apply Self-regulation & Accept Feedback	Evaluation visit to see what worked and what didn't. No more specifying plastic greenhouses.
Use & Value Renewable Resources & Services	99% recycled plastic
Produce no Waste	Reusing the raspberries & their supports
Design from Patterns to Details	Zones identified first; followed by bubble design & then detailed design.
Integrate Rather than Segregate	Consideration given to integrating play and growing, although this idea was not really developed.
Use Small & Slow Solutions	Start with a limited area under cultivation & allow clients to build on early successes.
Use & Value Diversity	-
Use Edges & Value the Marginal	Identifying that the moderately shady areas of the site were suitable for raspberries.
Creatively Use & Respond to Change	-

## 02. Church Fenton

### Plus

- Client happy with result
- Design met the brief
- Trees established well
- Produced a yield in year 1 → Client can build on early successes
- Project came in well under budget

Greenhouse blew away

### Minus

- No compost bin → Missed opportunity for nutrient cycling
- Warm microclimate → missed opportunity for something more exotic/higher value  
→ apple trees could have gone elsewhere
- No water butts installed
- Only zone 1 → No Zone 5

### Interesting

- Client's adoption of design → Identifying new growing spaces  
→ more confident with annual veg than fruit  
→ changing greenhouse to cold frame
- Introduction of bird table
- Quite a minimal intervention

# reflection

## What went well?

- Using the SADIM design cycle & tools (sector analysis in particular) allowed me to identify opportunities for better placement of elements (e.g. Raspberries in semi-shade, raised beds in the most visible part of the garden)
- Using the design process and tools on a live project: I had to make judgement call about how much to foreground the permaculture thinking behind the design, and how much to just get on with it.
- Specification of plants was an opportunity to research more varieties (I specified greensleeves because the client said they liked golden delicious apples; this variety is similar but more suited to the local climate & with low maintenance needs).
- Nice “Permaculture by stealth” design – no preaching to the client, which I think (hope) they appreciated.

## What was challenging?

- Having to keep the design quite minimal/conventional to meet the client brief; limited opportunities for “permaculture” design ideas to make it into the design.
- I think I was too client-led in this design, and the integrity of the permaculture suffered as a result. Rather than encouraging them to adopt a more sustainable lifestyle (e.g. Composting), I tried to second-guess how receptive they’d be and decided it might be a step too far for them initially. However, if I’d pushed it with them, they might have surprised me and been more receptive than I expected. Maybe I’m being a bit too shy about permaculture advocacy.
- I didn’t put much thought into integrating child’s play into the design. This was a missed learning opportunity.
- I won’t be specifying cheap plastic greenhouses again!

## Long term visions & goals

- Develop design skills further; use on a bigger project
- Use the design in my portfolio to be able to get more similar work for private clients (and as a teaching aid).
- Try to better judge the appropriate balance between client and ‘landscape’; bolster own confidence & integrity as a designer.

## Next achievable steps

- Identify the next project.
- Start designing.