



Urban Oasis, Lancaster Grove, London
for Optic Realm Ltd
in association with John Pardey Architects

Landscape & Ecology

September 2014

358/doc/002 rev C

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The Environmental Design team included:

Luke Engleback	AoU CMLI Chartered Landscape Architect/Ecourbanist
Gary Grant	CEnv FCIEEM Ecologist
Sam Ashdown	Graduate Architect
Jose Pastor Reig	Urbanist

Revisions:

Rev A	10.10.14	planting plans and schedules, paving plan added
Rev B	15.10.14	drawing revised to update rear garden design
Rev C	17.11.14	neighboring trees

Clifford Pugh House, Lancaster Grove, London

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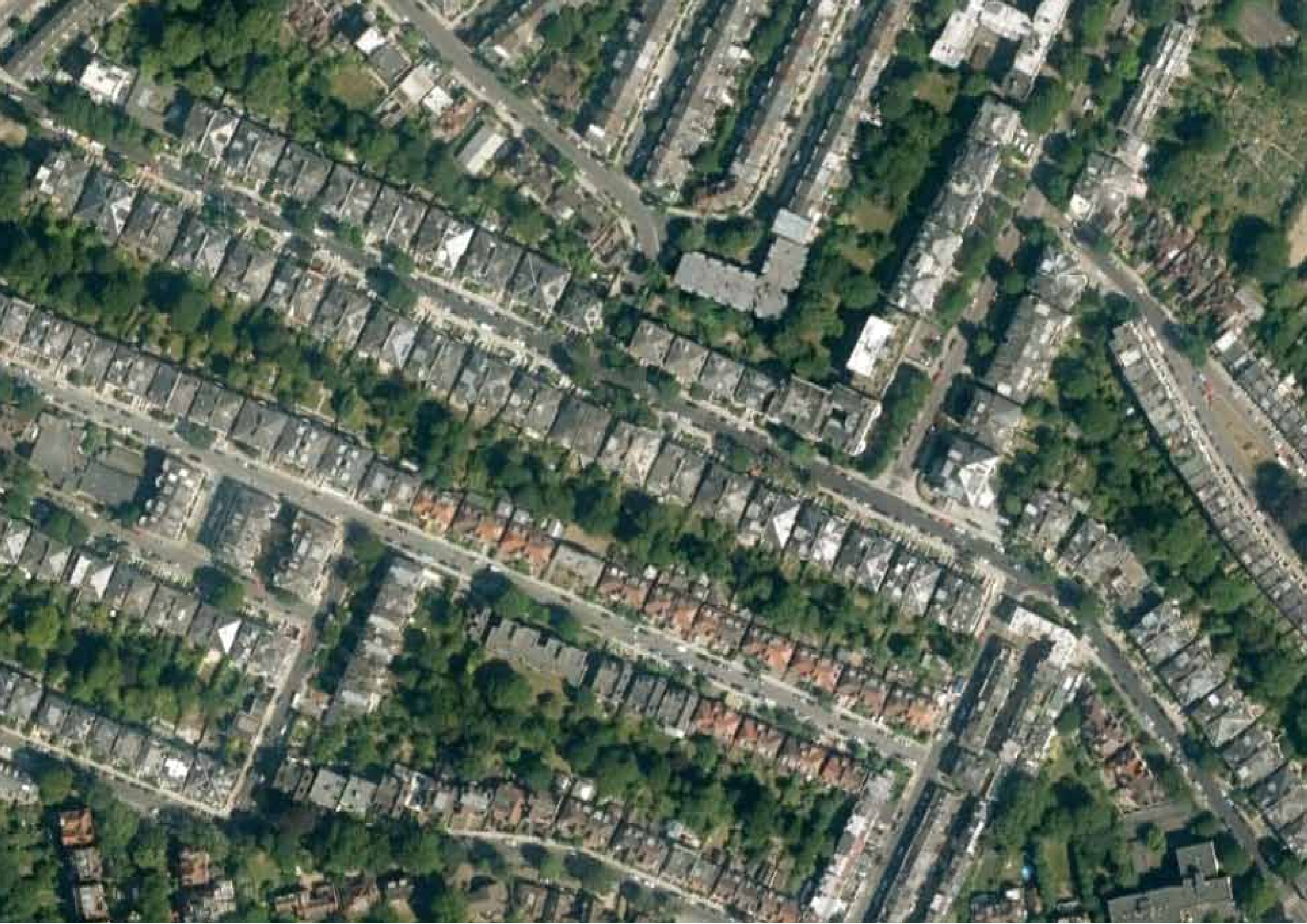
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studioengleback

Studio Engleback
245 Upper Grosvenor Road
Tunbridge Wells
Kent TN1 2EJ

t: 01892 538 537
e: luke@studioengleback.com
w: www.studioengleback.com





Introduction

The site is a former hall of residence for UCL and will be rebuilt as 15 apartments designed by John Pardey architects in a building that takes its reference from the surrounding villas.

Belsize Park takes its name from the Manor of Belsize (a corruption of the french "bel assis" meaning well situated) first mentioned in 1317. Later a house and gardens dating from the 17th century were located here. Large Villas were built here mainly between 1852-1878. It is a leafy suburb just over three and half miles from central London, favoured by many actors, writers and television presenters.

The closest tube station is Swiss Cottage and the Belsize Park tube station on the Northern Line. It is located some 12 minute walk from the site. There is no car parking as part of the new proposal, however there is significant bike storage in a lower ground floor accessed by ramps to pavement level. There is a small garden to the front of the building with a slope towards this lower area, paths to access the rear on each side of the villa, and a larger rear garden which will be mostly a shared space.

The two lower ground floor garden apartments facing north east have a small private garden strip set about one metre below the shared garden, it would seem reasonable to provide some screening to this apartment from the common garden and to allow as much light as possible to fall on this frontage. A number of other apartments have small balconies or terraces.

A water feature is not required for the garden, but harvesting roof water to irrigate the garden in future longer drier summers would be an advantage. Vegetation reduces urban heat by up to 7°C, but to do this it needs soil moisture for evaporative cooling.

One of the roles of the outdoor space will be for residents or their guests to smoke, and this needs a covered area and, as a non-smoker myself, this should be as far from any open apartment windows and not at the front of the property.

In order to accommodate potentially a large number of people on a sunny day, the garden should have a series of discrete areas for sitting, and eating - and these should be of different sizes. For this reason we think that a well planted, lush garden can accommodate more people without it feeling crowded. Although there is a small lawn at present, lawns need weekly mowing - it is not necessary to have lawn to be a lovely garden, so this latter route is taken in this workbook. The property will remain in the portfolio of Optic Realm Ltd so maintenance is an issue - a well planted garden does not necessarily equate high maintenance, and so the ideas here are based on my own north west facing urban garden in terms of density of planting. This tends to need a clear out at the beginning and end of the season with some on-going ad-hoc planting. There can be a small space for residents to grow plants in pots if they wish without spoiling the garden effect - one of an urban oasis.



Site & scheme appreciation

Site Appreciation

The building faces south southwest onto Lancaster Grove opposite Crossfield Street. There is a narrow (approximately 2 metre wide) pavement with a 4m high lamp post set about 500mm in front of the front boundary supporting parking and a school sign. The luminaire is traditional styled with downward cowed light on a utilitarian post. There is parallel parking in the street subject to residents permit.

The property had been owned by University College London as halls of residence until being sold to Optic Realm Ltd. It is a cream painted, of little architectural merit that may have been a replacement building post war as the area was bombed by the Luftwaffe but bombsight.org/explore/ does not show any bombs to have fallen on Lancaster Grove.

There is a small front garden with a low stepped and painted rendered wall and privet hedge, shallow descending steps to an entrance on the western corner. There are narrow passageways to the north and east of the building. The rear garden is bounded by a brick wall and has a number of self seeded sycamores between 9-14 metres high that would appear to have originated from two large sycamores in the adjacent garden to the north. Managing self seeded sycamores will be an on-going task in this garden.

There is a fall of 500mm across the frontage of the property from west to east. There is a fall of about 500mm from road to garden along the western passage along the existing building, and about 200mm on the eastern passage.

Gary Grant will be making an ecological assessment of the site - the proposals we make will have benefit to wildlife in mind in terms of nooks and crannies for invertebrates, potential bird roosting, and nectar bearing plants.



Stepped low boundary wall and hedge, street sign had been mounted onto building until recently



View of the property from Crossfield Street



View of the property looking west along Lancaster Grove



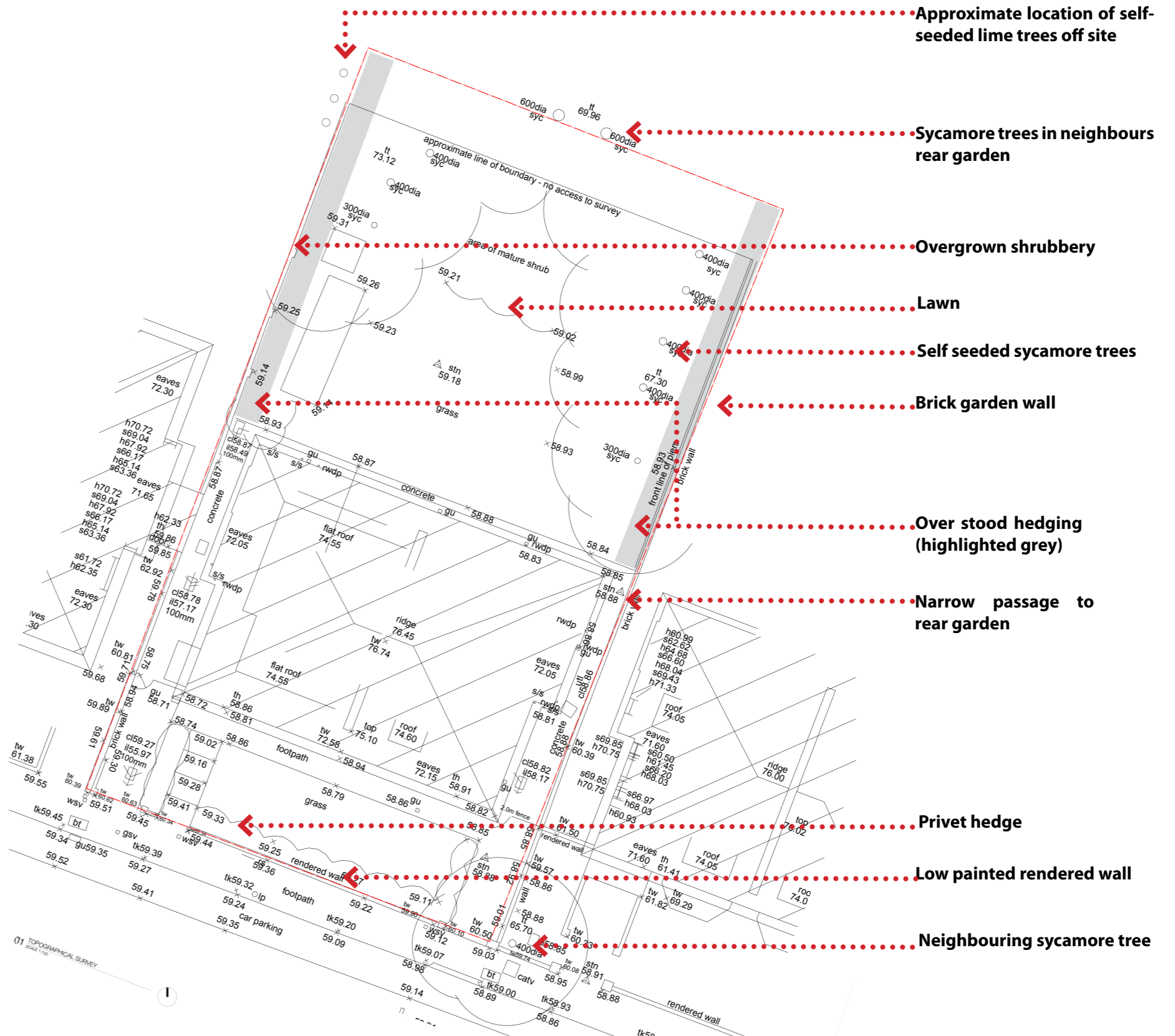
View of the property looking east along Lancaster Grove



View of the front garden of the existing property



Aerial view of the existing building
source: google earth



Existing topographical survey
source: JPA

Site Appreciation: Rear Garden

The rear garden is bounded by a brick wall, about 1300mm high, to the west and to the east. Neighbours have added a timber extension to the north west corner. A flimsy mesh fence forms the boundary with the neighbouring garden to the north. Two self sown sycamores about 8-9metres high are located immediately on the neighbours side of the rear fence. Their canopies starting at about 4.5metres above the ground, and extend over the north side of the garden, their roots will do the same and are likely to be fairly symmetrical in spread as there are few obstructions around them. The northern neighbour appears to have raised beds under the sycamores, and have planted Himalayan Birches on the north side the canopy.



View of northern boundary of the existing rear garden showing Lime trees in opposite rear neighbours garden



View of eastern boundary of the existing rear garden



View of western boundary of the existing rear garden



View of the north-western corner of the existing rear garden showing poor quality cluster of young self sown sycamores in the garden and formerly pollarded limes in the adjacent garden to the west

Some closely planted limes are located immediately on the neighbours side of the brick garden wall to in the north west corner - they post date the wall and show signs of being pollarded in the past and may well have been planted as a screen as they have few branches. The wall foundations are likely to act as a root barrier limiting the roots growth in the direction of this garden. Over stood privet hedges have been planted in front of the walls on each side. On the west side is a large bike shed and small garden shed. To all intents and purposes the rear garden is a tabula rasa, fairly level and with access from the street frontage on each side of the building. There are gardens to the west and north and a tarmac area with low timber chalet accommodation to the east.



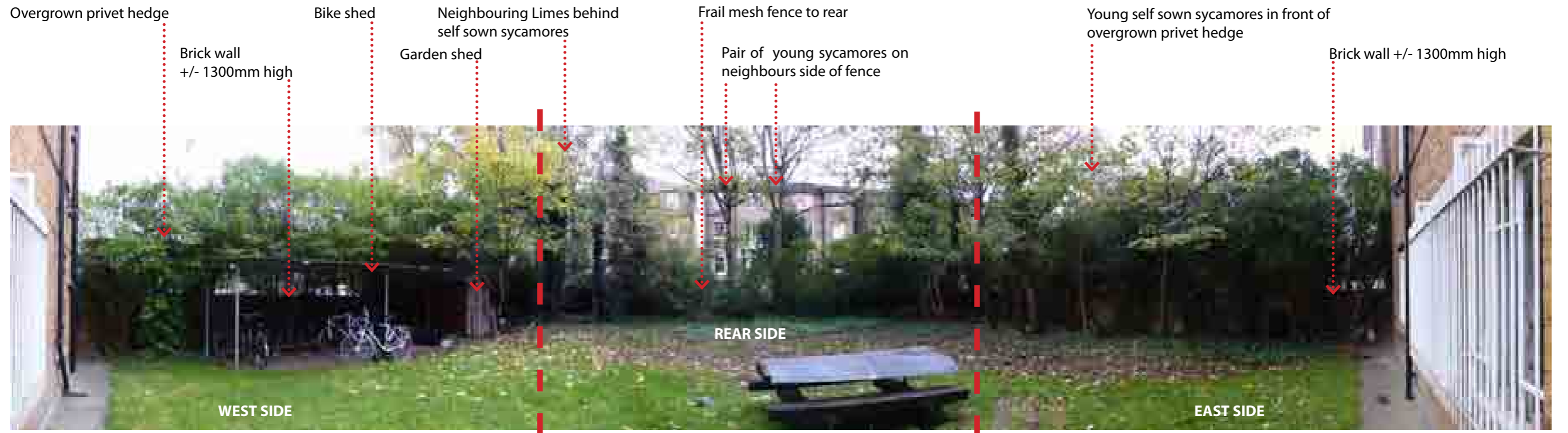
Overgrown privet hedge and brick walls to each side of rear garden



View south along eastern side path

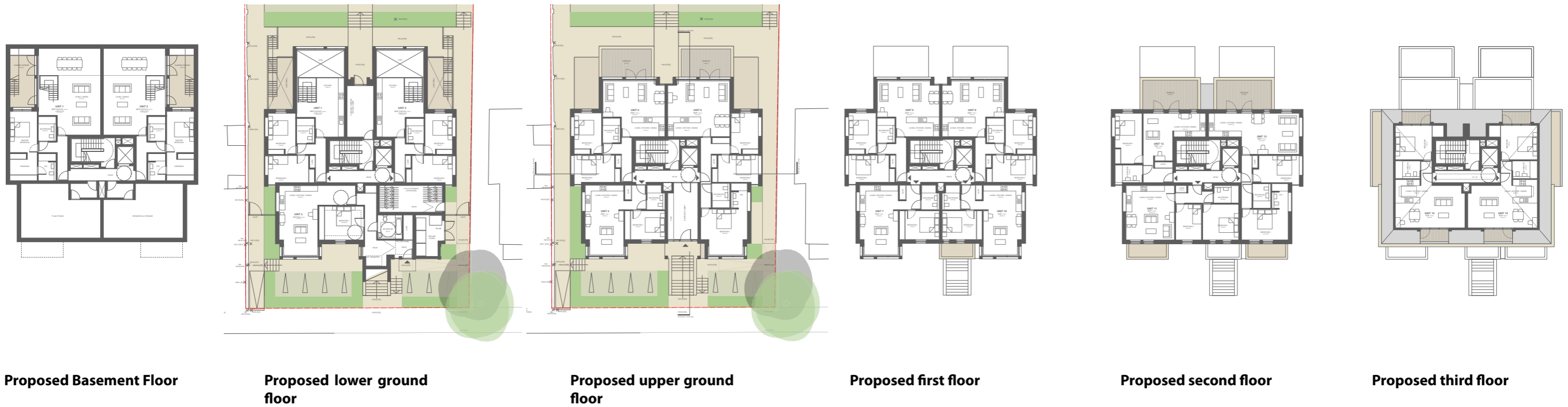


View south along western side path to gate



180° Panoramic view of the rear existing garden showing side and rear

Scheme Appreciation



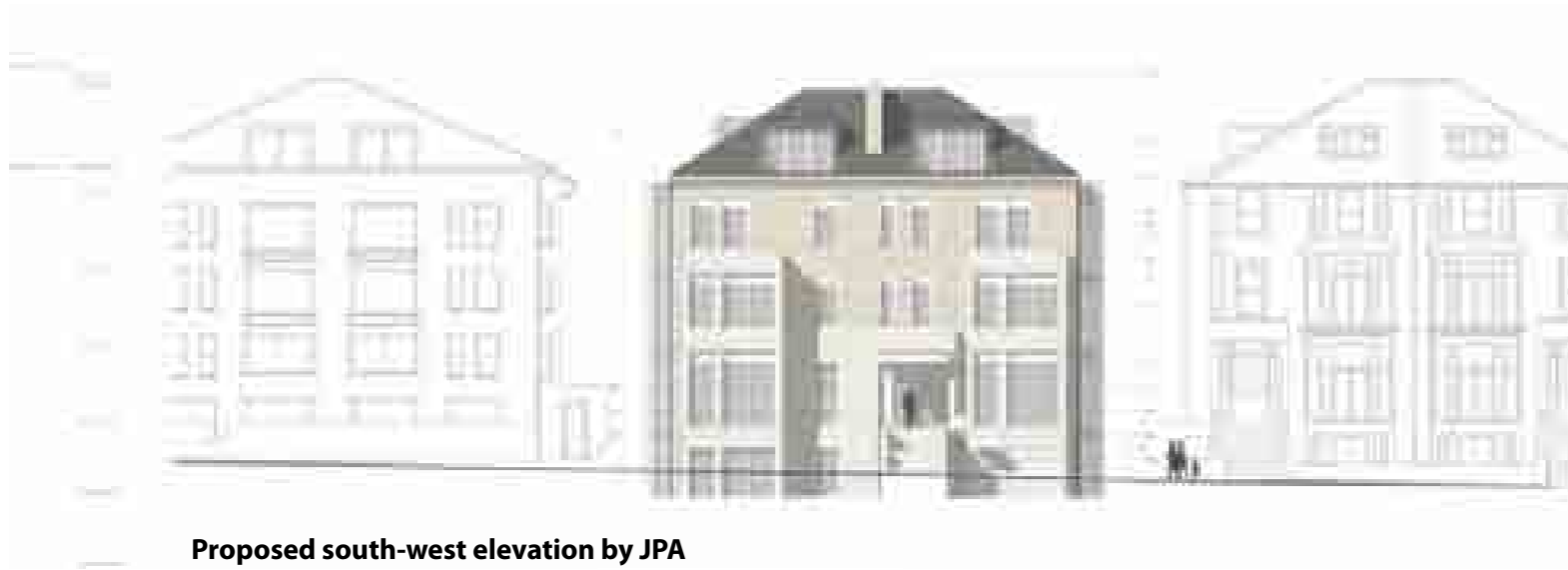
Proposed arrangement of apartments by JPA

The main entrance is approached, as with all the original villas on Lancaster Grove, by a flight of steps. There is also rear access to the lower ground floor by a flight of steps. The building has a central lift core.

The side paths are ramped to allow level access to the rear garden from either side of the block.

Six floors of accommodation are planned with apartments of different sizes, some single some double aspect. Two are located in the lower ground floor as garden flats. Two at 'ground' floor have substantial terraces overlooking the common garden to the north. There is also private planted space on the second and third floor.

Most villas in this street have front gardens - some with high walls. At present this property has a low rendered wall with a privet hedge rising above this.



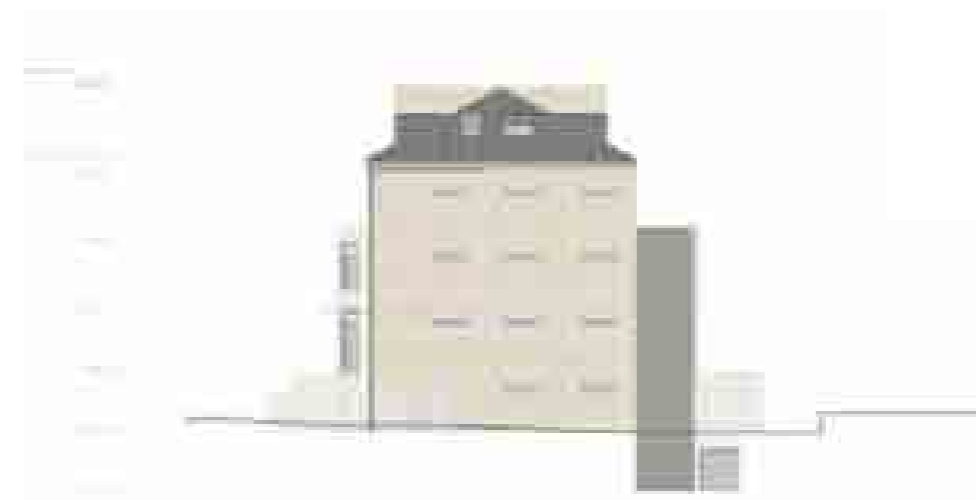
Proposed south-west elevation by JPA



Proposed north-east elevation by JPA



Proposed north-west elevation by JPA



Proposed south-east elevation by JPA

Ecology

Ecology Appraisal

1.0 Introduction

1.1 Gary Grant CEnv, FCIEEM working with Studio Engleback on behalf of Optic Realm Ltd, was commissioned to undertake an ecological survey and assessment of a proposed re-development project at Clifford Pugh House, Lancaster Grove, Belsize Park, London NW3 4HE. Grid reference TQ 26892 84666. Figure 1 shows the location of the site.

1.2 A desk study, phase 1 habitat survey and an assessment of the potential of the site to support protected species were undertaken and the findings of the surveys reported here. There is also an assessment of the current ecological status of the site and the ecological impacts of the proposal as well as recommendations for avoidance, mitigation and enhancement.

1.3 The existing site is a student residence created from a pair of Victorian villas. The proposal is to demolish the existing buildings and to create a new villa containing fifteen apartments, with gardens to the front and rear.

2.0 Methodology

2.1 The habitat survey involved describing and mapping the site using modified Phase 1 survey methodology used in Greater London (LEU 1994). Habitats are shown in Figure 1. A list of the plant species recorded from the site is presented in Appendix 1. Common plant names are used in the text, and both common names and scientific names (which follow Stace 1997) are used in Appendix 1

2.2 A protected species assessment was also made, examining suitable habitat features for protected species within the site or evidence of protected species (eg badger, reptiles, bats and breeding birds).

2.3 Fieldwork and reporting for the habitat survey was undertaken by Gary Grant FCIEEM, who is a qualified and experienced ecologist. The timing of the survey (9 September 2014) was considered ideal for the purposes of characterising the habitats present. A limitation of the survey is that plants that flourish early in the season may have been overlooked.

2.4 This report also refers to data searches undertaken by GiGL. GiGL prohibits reproduction of its reports, however their report was referred to in preparing this report

3.0 Site Context

3.1 The site is in a residential street in Belsize Park, North London. It covers approximately 980m². Swiss Cottage London Underground station is approximately 300m to the south-west and Belsize Park London Underground station 600m to the north-east. The site currently consists of a 5 storey, late 20th century conversion of a pair of Victorian villas, used until recently as a student residence. There is a small front garden and larger back garden connected by alleyways on each side of the building.

3.2 The adjoining streets are suburban with detached houses and some apartment blocks, all with mature gardens

3.3 There are no statutory nature conservation sites within 1km of the application site.

3.4 The site is within an Area of Deficiency (as defined by the Camden Biodiversity Action Plan), which means that there are no accessible Metropolitan or Borough nature conservation sites within 1km of actual walking distance.

3.5 A rail side complex in West Hampstead (comprising: West Hampstead Railsides, Medley Orchard, and Westbere Copse) is a Site of Borough Importance Grade 1. These sites cover 7.94 hectares and consist of orchards, woodland, scrub, grassland and tall herbs. At their nearest point, these sites are approximately 200m to the north-west of the application site.

3.6 Broadhurst Gardens Meadow, is approximately 0.3 hectares of rough grassland enclosed by housing. It is a Site of Borough Importance Grade 2. It is 400m to the west of the application site.

3.7 Frogal Court Wood is 0.2 hectares of woodland. It is a site of Borough Importance Grade 2 and is approximately 150m to the north-west of the application site.

4.0 Survey Results

Habitats and Vegetation

4.1 A habitat plan of the site is presented as figure 1. Habitats are described below. A full list of the plant species recorded from the site is given in Appendix 1 to this section.

4.2 Most of application site, approximately 35% or 350m² consists of a large building and paths. The building is brick. The roof includes a penthouse and pitched tiled sections. There is a garden at the rear with a lawn bounded by a number of mature trees and shrub and a lawn bounded by a hedge in the front. Vegetated areas covering 65% of the site or 630m².

4.3 A number of mature trees and large shrubs occur in the rear garden. Most of the trees are sycamore *Acer pseudoplatanus* with the occasional grey polar *Populus canescens* and elder *Sambucus nigra*. There are also a number of privet *Ligustrum ovalifolium* bushes, probably relicts of a former perimeter hedge. Ground flora beneath the trees is dominated by ivy *Hedera helix*, however bramble *Rubus fruticosus* agg, also occurs.

4.4 Also in the rear garden is a lawn (amenity grassland) dominated by perennial rye grass *Lolium perenne* with occasional cocksfoot *Dactylis glomerata*, annual meadow grass *Poa annua*, common daisy *Bellis perennis*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, dandelion *Taraxacum officinale*, and green alkanet *Pentaglottis sempervirens* amongst others.

4.5 In the front garden there is a lawn (amenity grassland) dominated by perennial rye grass and cocksfoot, with occasional daisy, greater plantain *Plantago media* and yarrow *Achillea millefolium*. There are privet hedges in the front garden, with the occasional spotted laurel. Ivy grows on the perimeter wall adjacent to an elder tree.

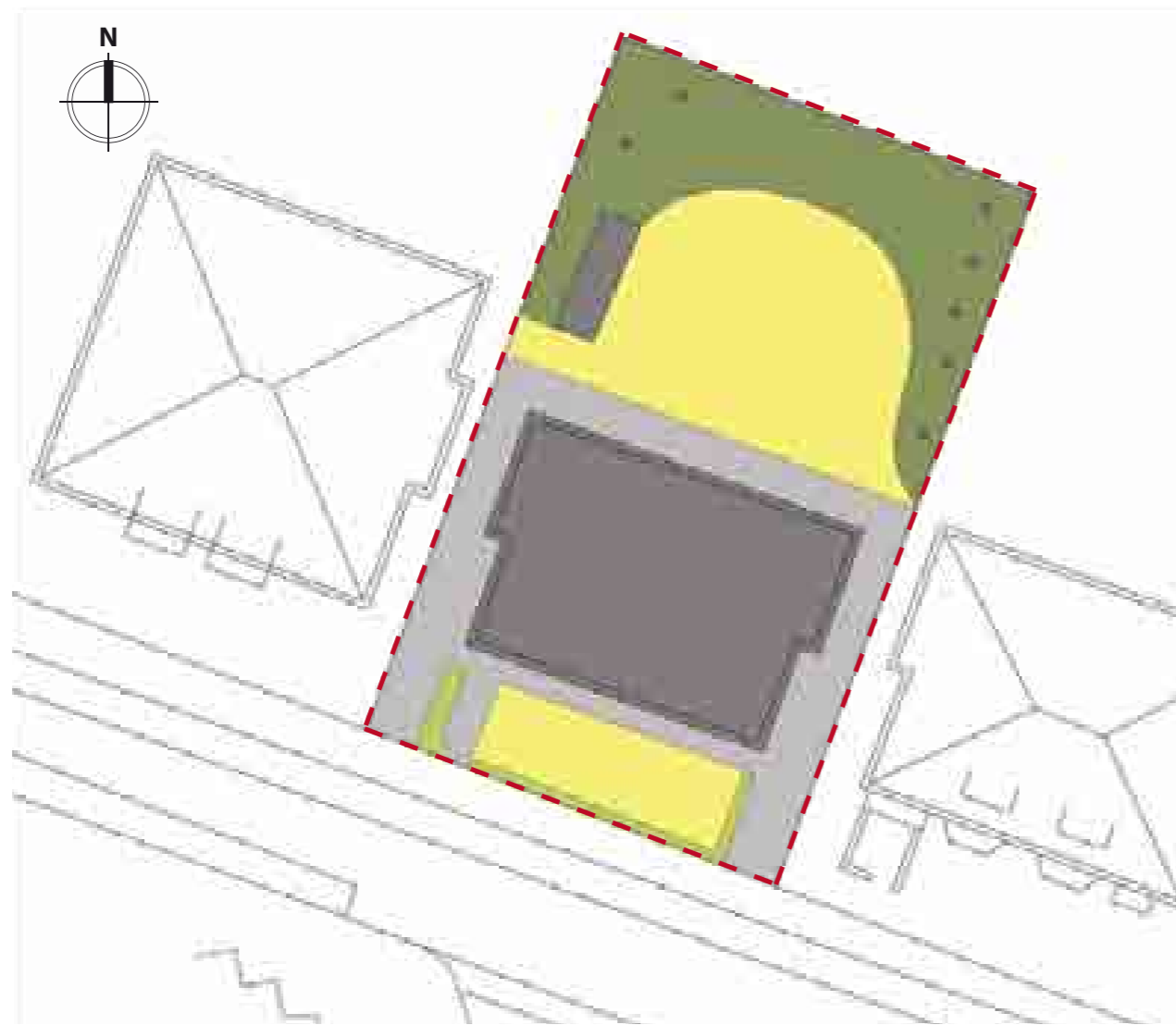
4.6 Gardens near the entrance with shrubs, ivy and silver birch in the distance. Royal Free Hospital in the background. Protected Species

Protected Species

4.7 'Protected species' are defined as those afforded protection from disturbance, killing or harm under the Wildlife and Countryside Act 1981 (as amended). The site was inspected for evidence of protected species (including badgers, reptiles, bats and breeding birds).

Bats

4.8 The main building is a brick structure with no obvious crevices, gaps or features that could be used by bats. The building was inspected from the outside and inside for signs of bats or features that could be used as roosts. The attic space was also inspected. No features, which could be used as roosts were observed and there were no signs of bats. The risk of bats using the building is considered to be low. GiGL have records of bats occurring



Scale (metres)
0 5 10

- Key**
- Amenity grassland (lawn)
 - Formal hedge
 - Woodland (non-native broadleaved)
 - Hardstanding
 - Buildings
 - Site boundary

Figure 1 Habitats

in the Hampstead area, including noctule, common pipistrelle, soprano pipistrelle, brown long-eared bat and Daubenton's bat. Pipistrelle bats have been recorded in the vicinity of the application site and it is possible that bats feed over the garden.

Badger

4.9 There are no records of badger in the immediate vicinity and no evidence of badger was found on site

Reptiles

4.10 The site is isolated from sites that support reptiles. The risk of reptiles occurring on site is low.

Birds

4.11 The hedges and shrubs provide cover for nesting birds. It is likely that a few pairs of birds breed on site.

Great crested newts

4.12 The site does not include ponds and the vegetation on site is isolated from other areas of suitable habitat. The risk of great crested newt occurring on site is low.

5.0 Site Evaluation

5.1 Approximately 35% of the site is un-vegetated with buildings or paths. Those areas are of negligible ecological value. The gardens provide habitat for wildlife including, possibly, breeding birds.

5.2 Sites can have ecological value ranging from international and national importance (for example SSSIs), to Metropolitan value, Borough value and down to local value and finally un-vegetated sites of negligible value. Given the presence of the gardens, which may support nesting birds, those vegetated sections of the site is considered to be of 'low local' value for nature conservation.

6.0 Impacts

6.1 The scheme involves the demolition of the existing building and the construction of a new building with the retention of the gardens. If it occurs, the clearance of hedges and shrubs could result in the loss of nesting sites for birds.

6.2 Provided the recommendations (see 7 below) are conscientiously implemented the ecological impacts of the development are predicted to be neutral.



Lawn and hedge in front garden



Building frontage with no features likely to be used as roosts by bats



Lawn in rear garden



Rear elevation.



Interior of attic space.



Woodland edge in rear garden

7.0 Recommendations for Avoidance, Mitigation and Enhancement

Hedges and Trees

7.1 It is recommended that existing trees on the perimeter of the site are retained wherever feasible. New tree and shrub planting should include native species or species with a documented value for wildlife in order to increase ecological value and provide feeding opportunities for wildlife.

Bats

7.2 Although no bat roosts have been found on site, bats occur in the vicinity and it is likely that bats feed over the garden. An artificial roost box for bats is recommended. This can be affixed to one of the trees in the rear garden. Self-cleaning purpose-made woodcrete box is suitable (e.g. Schwegeler 1FF).

7.3 Outdoor lighting in the new development should be kept to a minimum necessary for safety and security. The use of bat-friendly low UV lighting with zero upward or lateral light spillage is recommended. (See http://www.bats.org.uk/pages/bats_and_lighting.html)

Birds

7.4 Under the Wildlife and Countryside Act 1981 it is an offence to disturb nesting birds or damage their nests or eggs. The main bird-nesting season occurs between March and July (and in some cases through to September). Clearance and management of undergrowth during that period should be avoided. If such works are unavoidable, checks should be made by a suitably qualified and experienced person to ensure that the affected areas do not support nesting birds.

7.5 Nesting boxes for house sparrow, robin, tits and other birds that use artificial boxes can be installed on north facing walls and trees.

Management & Enhancement

7.6 Management of the gardens should be sympathetic to wildlife, with a relaxation of the cutting to allow wildflowers and wildlife to flourish in some areas. Wildflowers should be cut annually in late summer with cuttings removed for composting. Hedges and shrubs should not be cut during summer months to allow birds to nest without disturbance. Drilled dead wood and bug hotels also enhance biodiversity (see page 20).

Supervision & Monitoring of Works

7.7 Contractors should be reminded of their obligations and responsibilities with respect to wildlife. They should be informed of these recommendations, and works monitored by a suitably qualified and experienced person to ensure compliance. If protected species are discovered unexpectedly on site during works, works should cease and further detailed advice should be sought from the project ecologist.

References

London Ecology Unit 1994. Habitat Survey for Greater London

Stace, C. 1997. New Flora of the British Isles. Cambridge University Press.

Appendix 1

List of plants noted during Phase 1 survey

Scientific name	Common name	DAFOR
<i>Acer pseudoplatanus</i>	Sycamore	A
<i>Achillea millefolium</i>	Yarrow	O
<i>Arrhenatherum elatius</i>	False oat grass	O
<i>Agrostis stolonifera</i>	Creeping bent	O
<i>Bellis perennis</i>	Common daisy	O
<i>Dactyls glomerata</i>	Cocksfoot	F
<i>Festuca rubra</i>	Red fescue	O
<i>Hedera helix</i>	Ivy	LD
<i>Ligustrum ovalifoium</i>	Privet	O
<i>Lolium perenne</i>	Perennial rye grass	LD
<i>Pentaglottis sempervirens</i>	Green alkanet	R
<i>Plantago media</i>	Greater plantain	O
<i>Plantago lanceolata</i>	Ribwort plantain	O
<i>Poa annua</i>	Annual meadow-grass	O
<i>Populus canescens</i>	Grey poplar	R
<i>Ranunculus repens</i>	Creeping buttercup	R
<i>Rubus fruticosus agg.</i>	Bramble	O
<i>Sambucus nigra</i>	Elder	R
<i>Stellaria media</i>	Chickweed	R
<i>Taraxacum officinale agg</i>	Dandelion	O

D = Dominant

A = Abundant

F = Frequent

O = Occasional

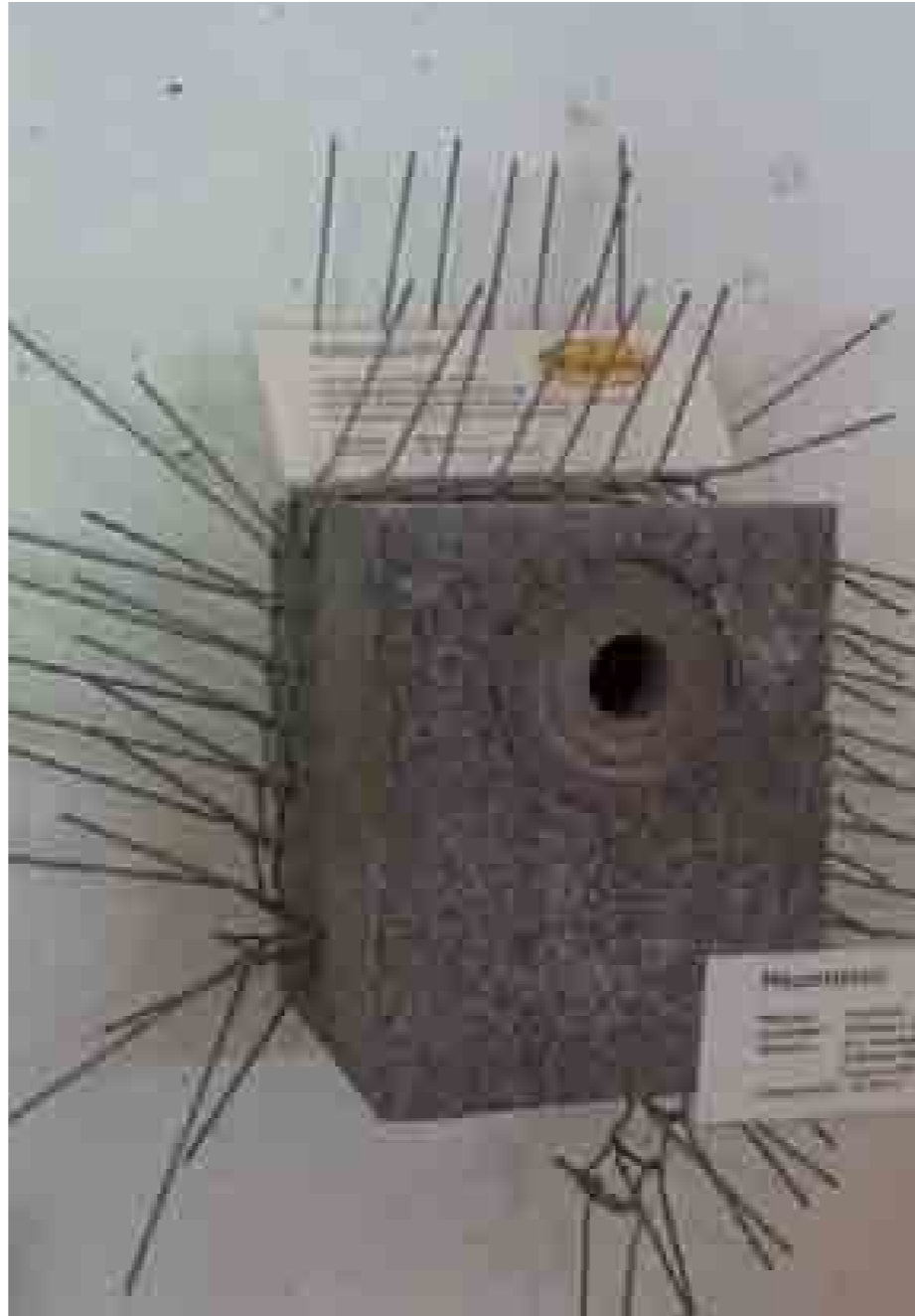
R = Rare

L = Locally

Ecology Features



Schwegler 1FR integral at box fix to flank walls



Bird box mounted to the north side of the pergola structure



Lacewig and ladybird box



Bug hotel



Log pile of a living roof

Garden Layout Proposals

Garden Proposals

Shared & private open space provision

Communal and private open space are both provided in this design - the greater part of the latter overlooking the rear garden. Front and rear gardens have different functions - one providing defensible space and a frontage - especially to the view from the street and closing the vista along Crossfield Street.

In contrast to the properties on either side which have significant areas of hard standing to the rear, we proposed that this garden should be lush and a surprise.

The rear balconies and terraces are effectively part of that rear space and we think they need to be treated together. The plan opposite shows the disposition of shared and private open space.

Green Infrastructure

Urban planting is essential green infrastructure that delivers a range of environmental services. Having been overlooked for many years, these are now being recognised for the great value they provide in a variety of ways, including financial. The UN study on the economics of ecosystems and biodiversity (TEEB 2010) outlined the benefits of considering our own life support system and in 2012 the UK was the first country to publish a National Ecological Assessment that placed a monetised value on ecosystem services. Later that year the HTA (Horticultural trades association) published a method to calculate the monetised benefit of landscape using a Studio Engleback project as its pilot. The key benefits include increase property values, value regarding dealing with surface water, reducing energy use, health and wellbeing, and biodiversity.

Climate change adaptation

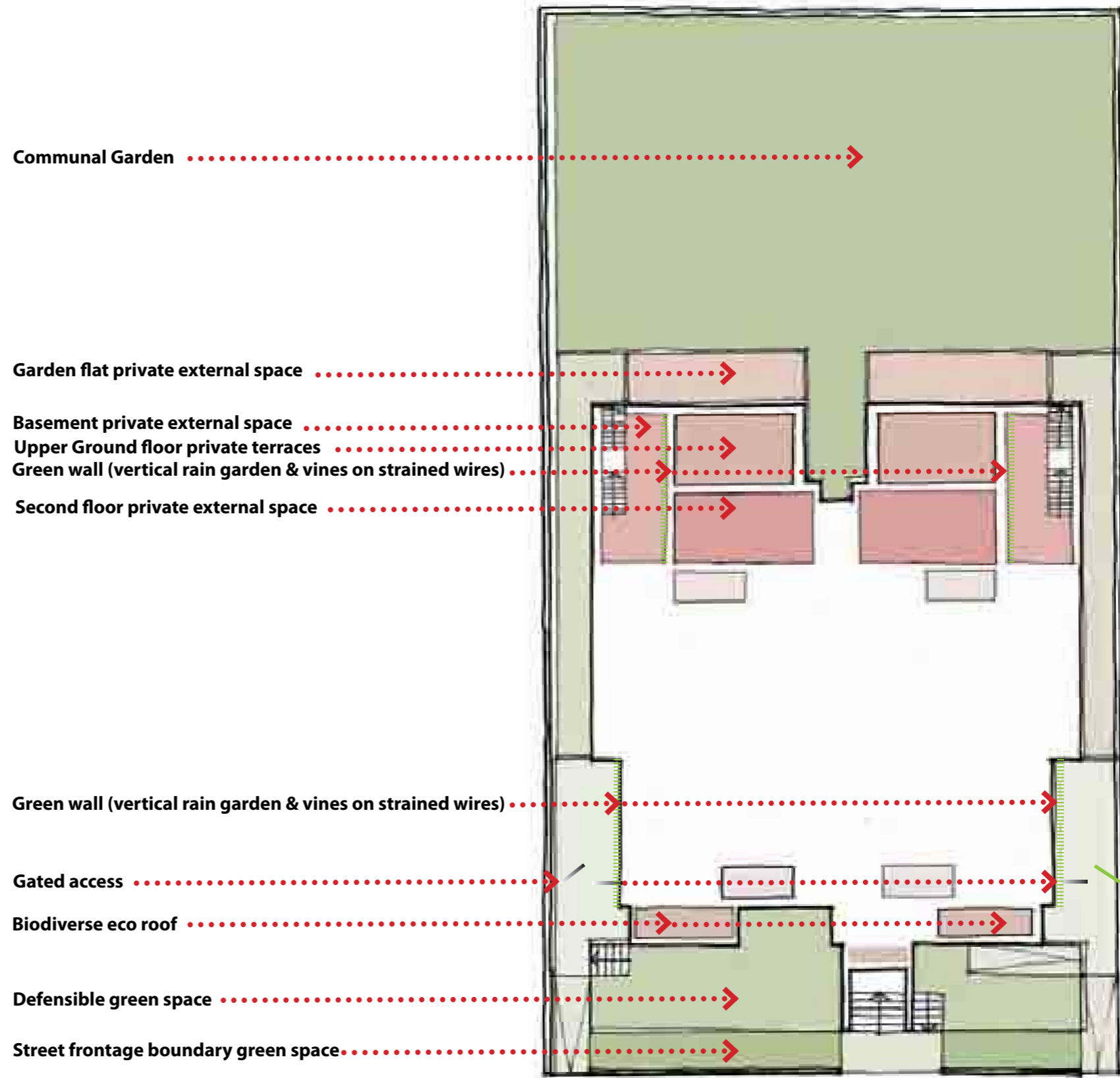
Greening urban areas is an important adaptation response to future climate change and this function is intimately connected to a water sensitive approach to urban design (WSUD) at all scales of intervention. Verdant surfaces mitigate the urban heat island effect by both reducing heat gain and subsequent re-radiation from masonry at night. On hot days a well vegetated green wall, given sufficient ground moisture, can deliver at least 2°centigrade of local ambient cooling through evapotranspiration.

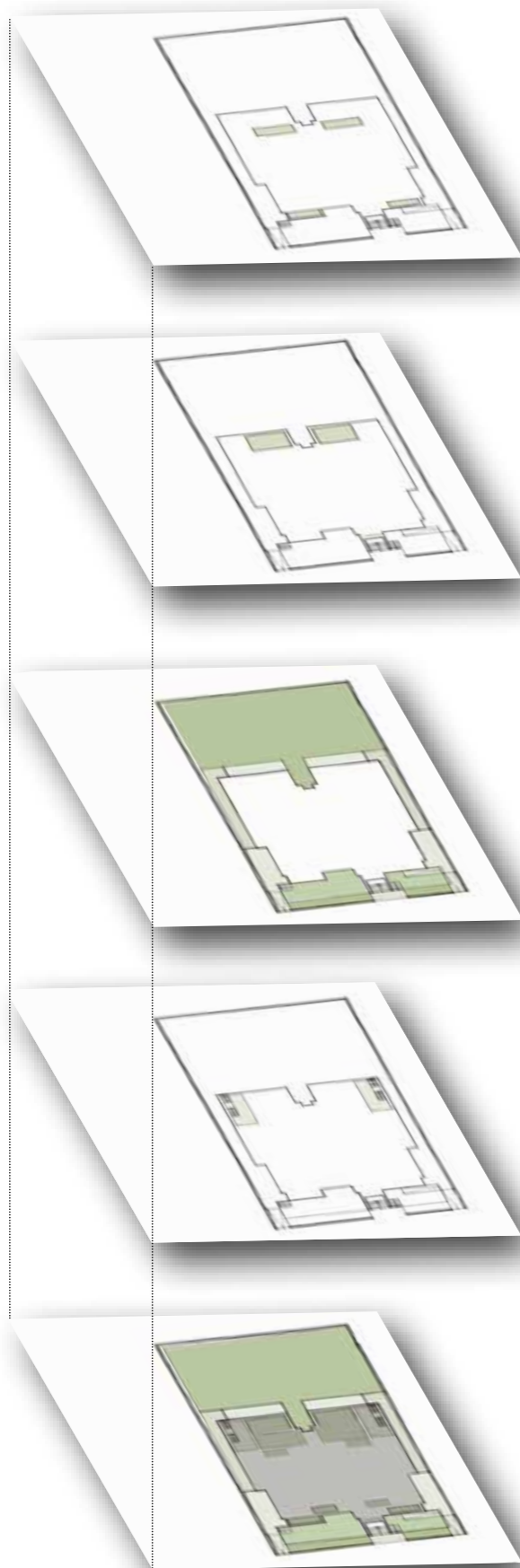
Health & Welbeing

The massive surface area presented by leaves also cleans air of aeolian dust particles (including PM10s and PM 2.5s) that cause respiratory problems. As a low arousal colour, verdure also reduces stress which in turn boosts the immune system. In recent years there have been an increasing number of studies that linked quality green landscape to improved health outcomes.

Wildlife value

The current garden area is largely overgrown and overtly shady, but it may support breeding birds so is considered to be of low local ecological importance. Whilst planting native species is generally considered to be beneficial to improving biodiversity, provision of food sources for invertebrates, birds and bats over a long season is key and this can be done





Second floor open/greenspace - planting in containers to the rear and a biodiverse living roofs to the roofs of the porch and bays at the front

First floor private open space - planting in containers

Open space at Grade

Lower ground floor greenspace and potential for greening walls to light wells planted in the ground

All potential open space

with non-native plants that bear nectar and/or berries. Improving tired urban soils and allowing access to them for foraging song birds is also important. LB Camden also has advanced thinking on building integrated vegetation as a way of extending provision of ecosystem services. We propose to address the sub headings above by creating a garden that mixes native and non-native plants that offer opportunities wildlife, these include nectar bearing plants over a long season from early flowering *Mahonia* and *Sarcococca* to late flowering common ivy, seed bearing vines like *Clematis*, berries, low ground cover that allows foraging opportunities for Blackbirds, habitats for spiders and bumble bees such as big hotels, living roofs, or the dead foliage of ferns.

Defensible Space

The front garden has a low wall to the pavement edge backed by a native species yew hedge and nectar bearing pleached lime trees providing a defined boundary, screening for ground floor apartments but also a sight of the street and no hiding places. There would be gated access to the side passages that lead to the rear apartments and shared garden, accessed via further gates with PIR LED (low energy, bat friendly) courtesy lighting.

Secure by Design Principles

The rear garden and side accesses will have 1.8m high fencing comprising vertical elements that are inherently difficult to climb or treillage that is less easy to climb.

Shared open space

The rear garden is designed to be filled with plants and a series of small personal spaces, and one larger communal space to provide a sense of privacy and to accommodate more people without feeling crowded. The two pergola pavilions provide shade, whilst the glazed verandah can extend the outdoor season and provides a place for those who smoke. This feature is set several meters away from the rear boundary so as not to cast a shade over the neighbouring garden. Notwithstanding the shady situation generally, the verandah could be fitted/retrofitted with thin film PVs as it faces south. Water from this roof would be harvested to irrigate the garden, paths would drain to planting beds.

Ancillary space

A stone and timber filled mesh fence unit would provide an acoustic baffle cum bug hotel to the heat exchanger unit located on the north west corner and the gardeners tool shed and compost corner to the north east/.

Biodiversity

We propose living roofs over these corner units with a micro-topography substrate depth of between 80-250mm plus some drilled logs to add to the biodiversity of the garden. Bird and bat boxes can be appended to the north side of the verandah and to the east wall of the building.

Greening the site

The aspiration is to clothe an area with verdure that is similar to the footprint of the whole site using the 3D elements and wall mounted verdure both on strained wires and as vertical rain gardens using the tree box system to intercept roof water.

Landscape proposals to the front

In Victorian times hedges and closely planted limes were often a feature of villa front gardens for privacy. The boundary with the back of the pavement is a low rendered wall backed by a yew hedge with a pleached lime tree screen 4.5m high above that. Low aromatic plants to be planted on the ground sloping back towards the building. The blank flank walls to west and east would be planted with wisteria and semi evergreen honeysuckle (*Lonicera henryi*) on strained wire supports. Apart from scented nectar bearing flowers early and in season, these plants may provide roosts for small song birds. Bird and bat boxes can be installed on the cooler east side. We propose that biodiverse living roofs be considered above the porch and bays.

Potential PV panels over dormer

Potential for greening balcony space to improve the apartment view

Wire support vines to flank walls

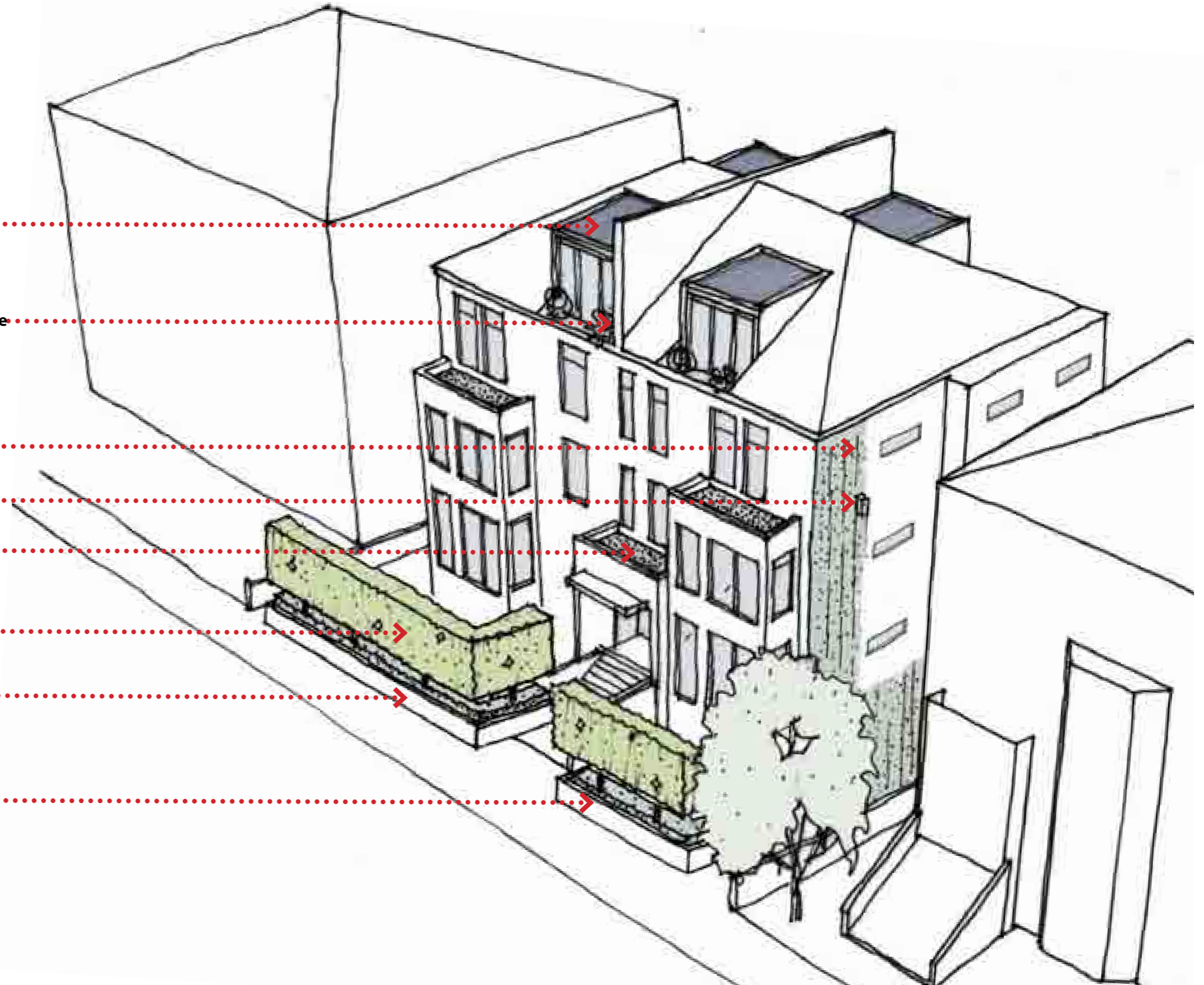
Bird and bat boxes to east wall

Living biodiverse roofs to bays and porch

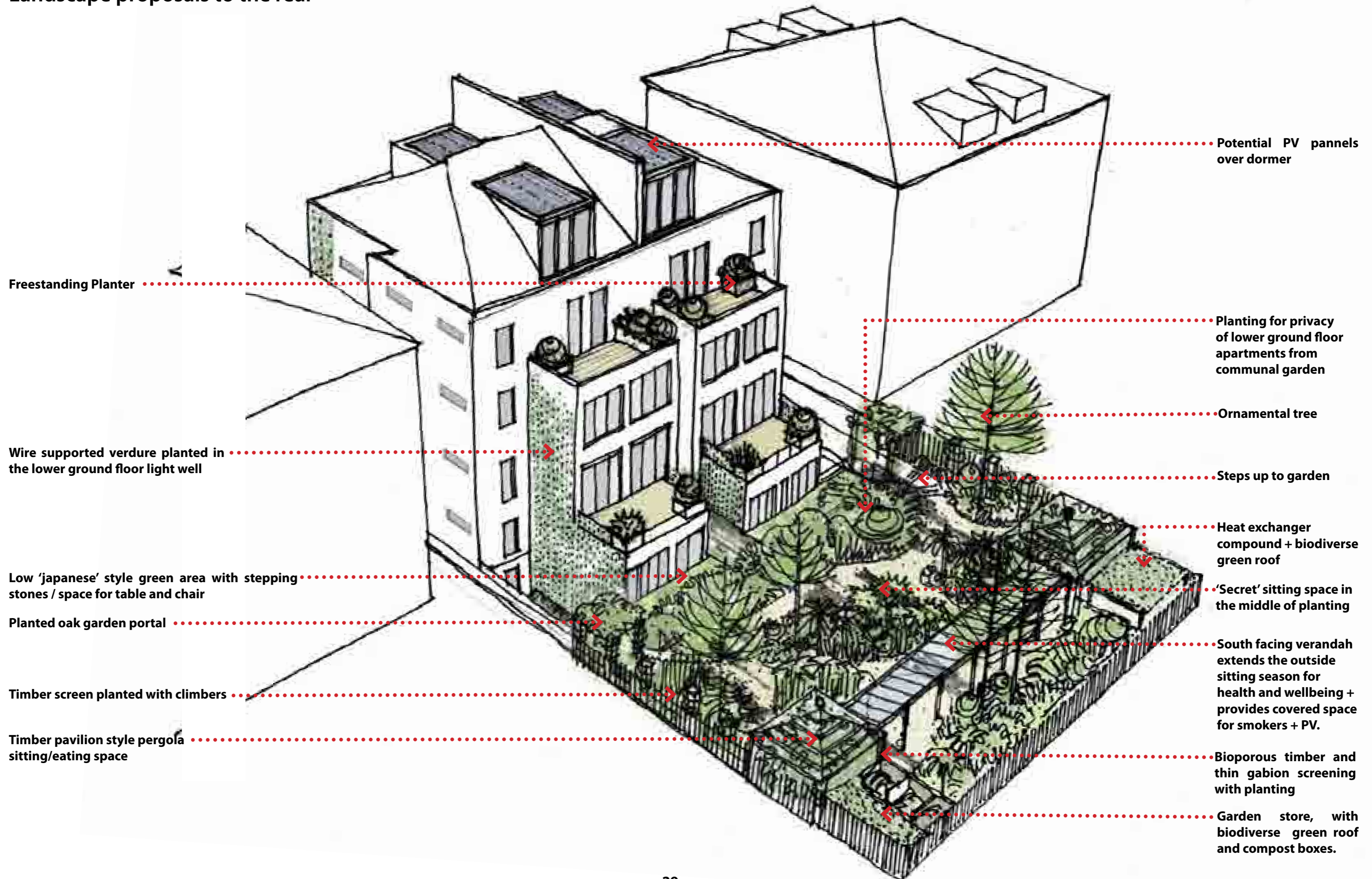
Pleached lime screen

Low rendered front wall and hedge behind

Low yew hedge in place of a wall and railings



Landscape proposals to the rear



Freestanding Planter

Wire supported verdure planted in the lower ground floor light well

Low 'japanese' style green area with stepping stones / space for table and chair

Planted oak garden portal

Timber screen planted with climbers

Timber pavilion style pergola sitting/eating space

Potential PV pannels over dormer

Planting for privacy of lower ground floor apartments from communal garden

Ornamental tree

Steps up to garden

Heat exchanger compound + biodiverse green roof

'Secret' sitting space in the middle of planting

South facing verandah extends the outside sitting season for health and wellbeing + provides covered space for smokers + PV.

Bioporous timber and thin gabion screening with planting

Garden store, with biodiverse green roof and compost boxes.

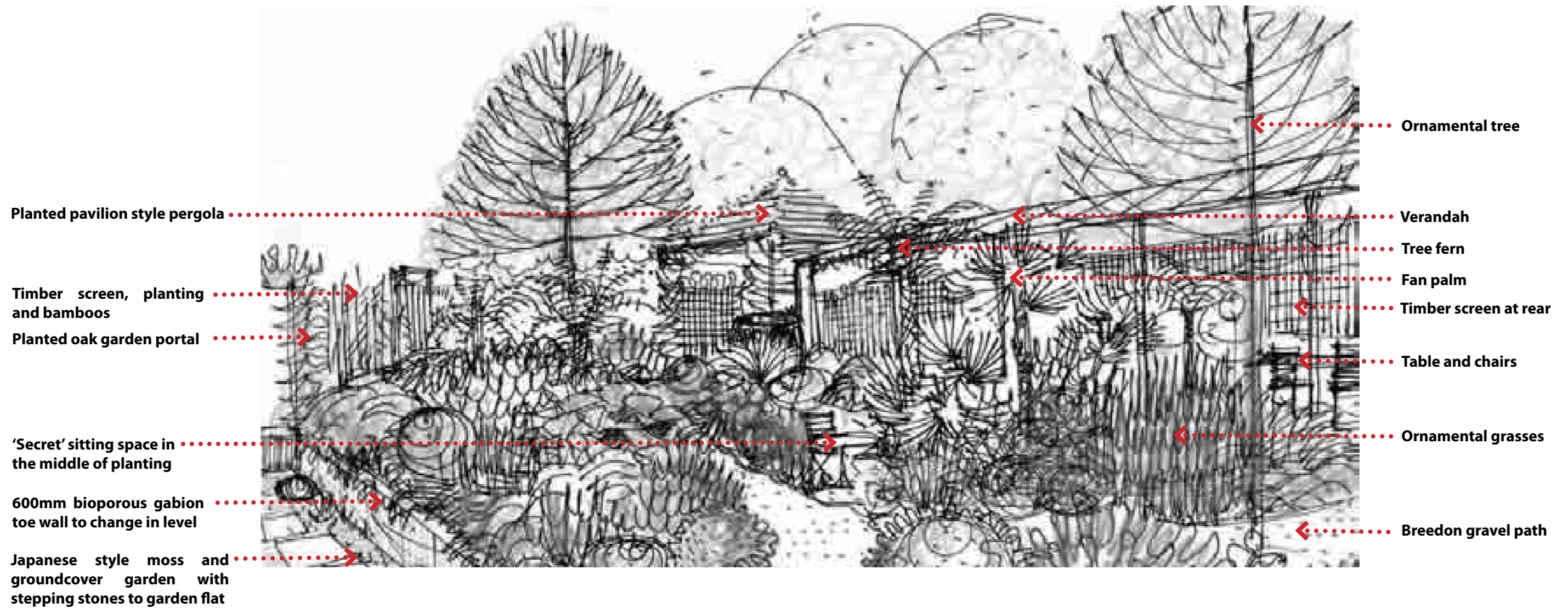
Urban Oasis



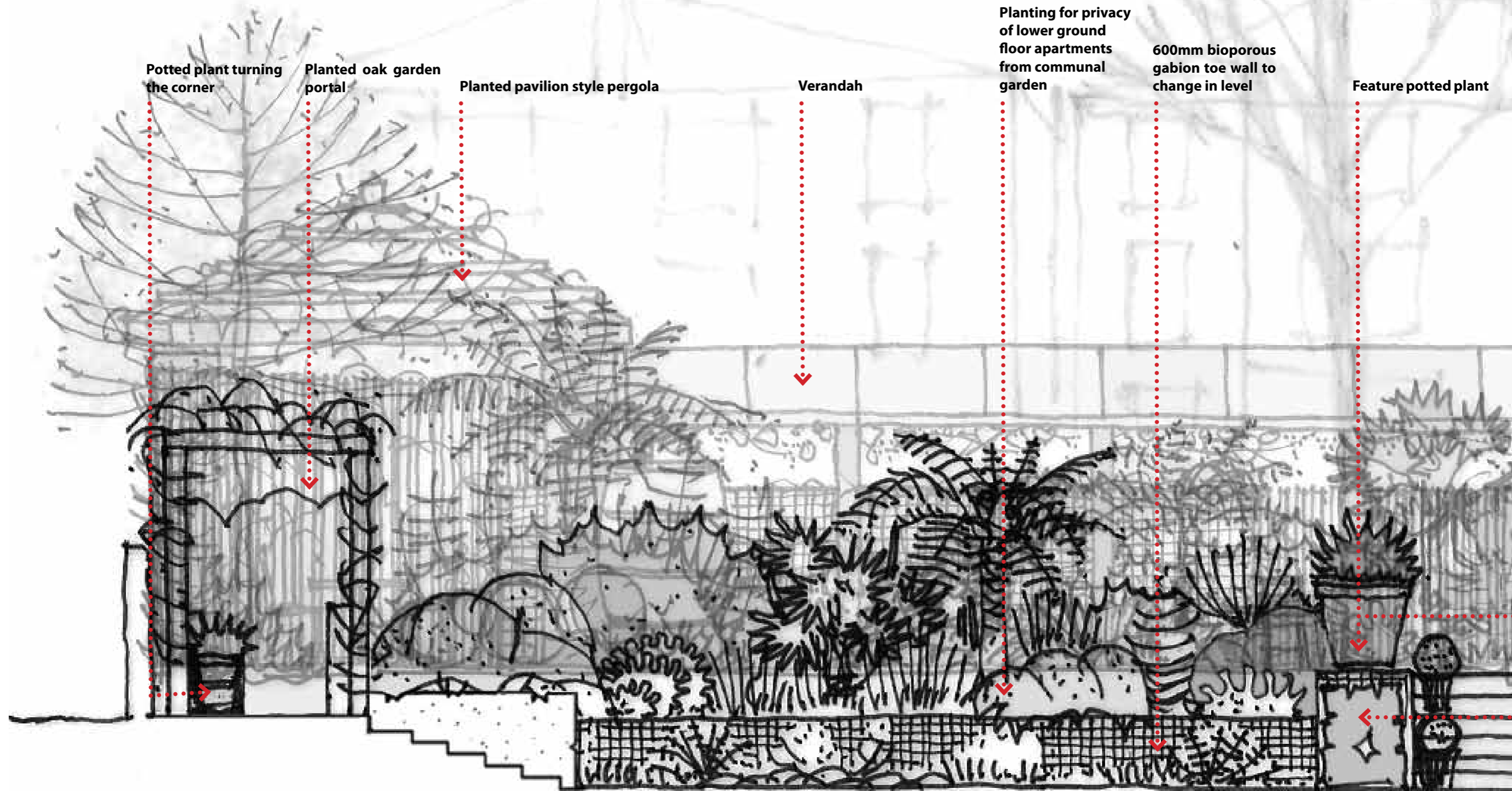
- Biodiverse green roof to ground source heat pump housing structure
- 'Secret' timber deck sitting space in the middle of planting
- Planted timber pavilion style pergola with scented vines
- Glazed Verandah with grape vine & protecting tender plants extends outdoor season
- Water butt
- 'Secret' sitting space in the middle of planting
- Timber screen, climbing plant trellis pillar & lush planting
- Planted oak garden portal
- Japanese style moss and groundcover garden with stepping stones to garden flat
- 600mm box hedge
- Lower ground floor 'area'

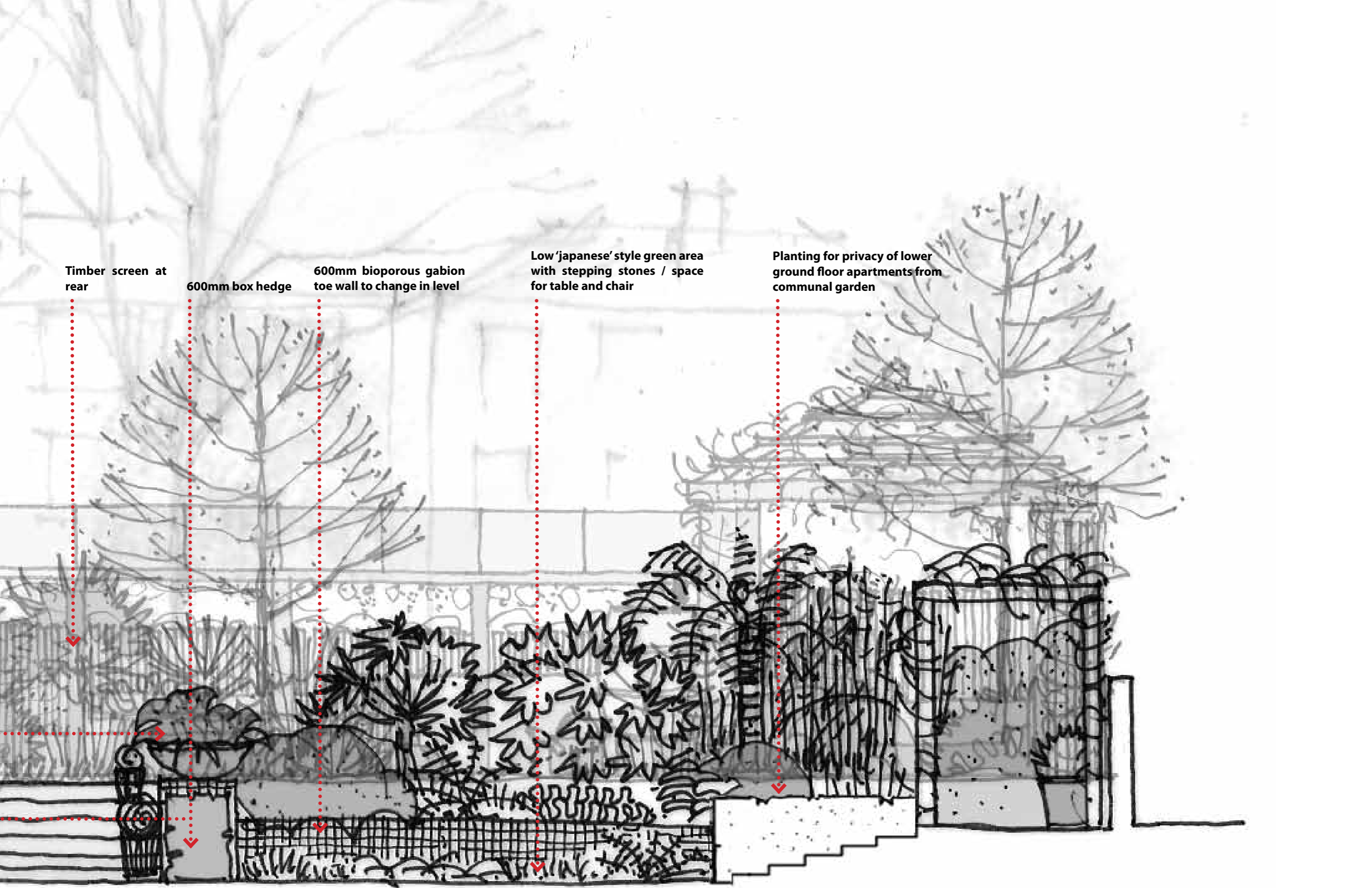
- Existing boundary trees
- Green roof to garden storage shed, access at rear of pergola pavilion
- Garden composting Space for communal eating -
- Table and chairs under glazed verandah
- Timber seating under planted pavilion style pergola
- Storm crate zone
- Lush planting over ground cover
- Ornamental tree
- Tree Ferns and fan palms
- Granite setts and stable block paving
- Stone steps
- Side path formed from mixing blue stable blocks with granite setts

NB granite setts laid with spacers to allow drainage to substrate. All paving drains to planting beds. Water harvested from verandah over central section of the garden. Ground source heat pump house in abeyance until specified.



Urban Oasis - Landscape elevation





Timber screen at rear

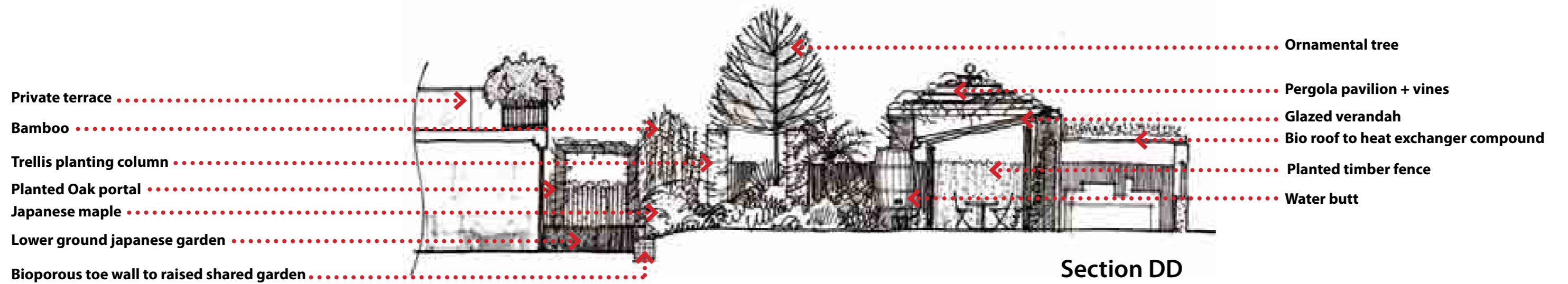
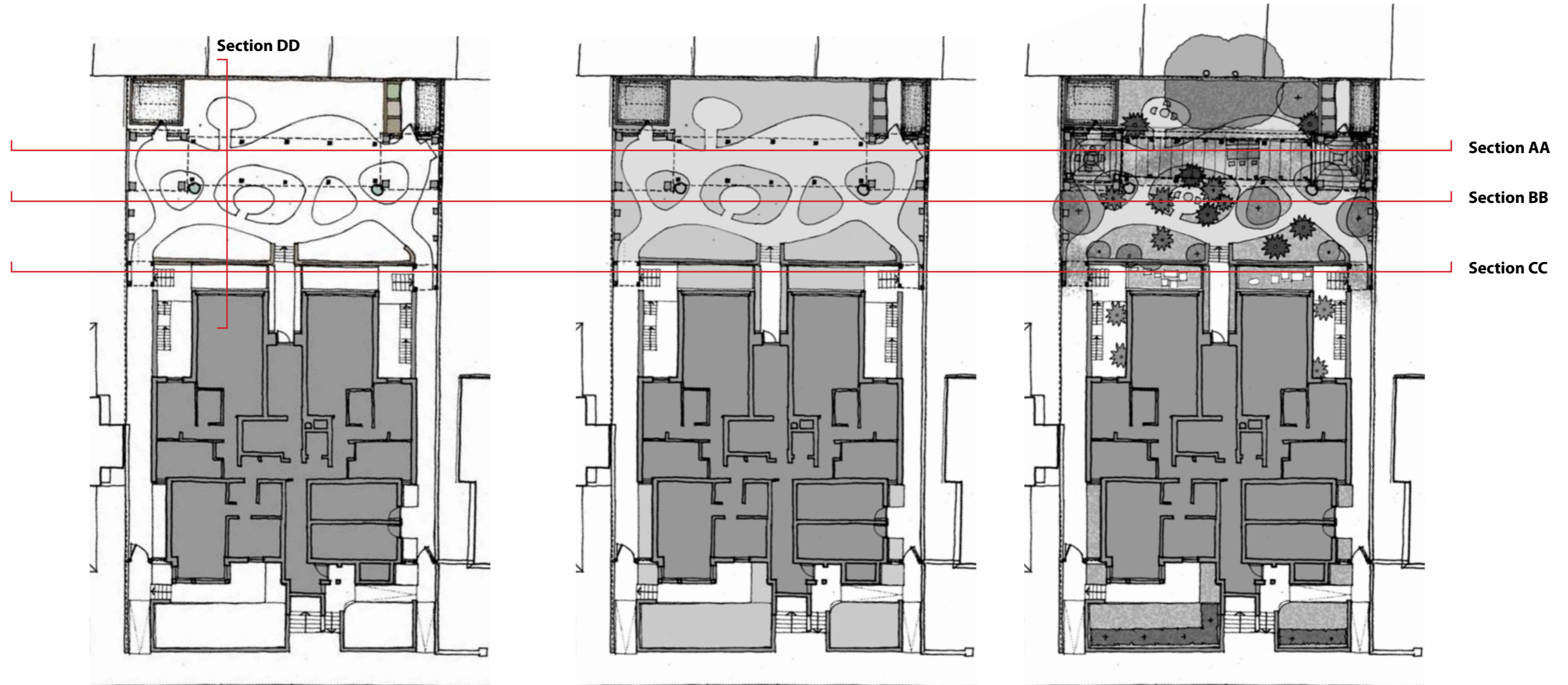
600mm box hedge

600mm bioporous gabion toe wall to change in level

Low 'japanese' style green area with stepping stones / space for table and chair

Planting for privacy of lower ground floor apartments from communal garden

Urban Oasis - Landscape sections

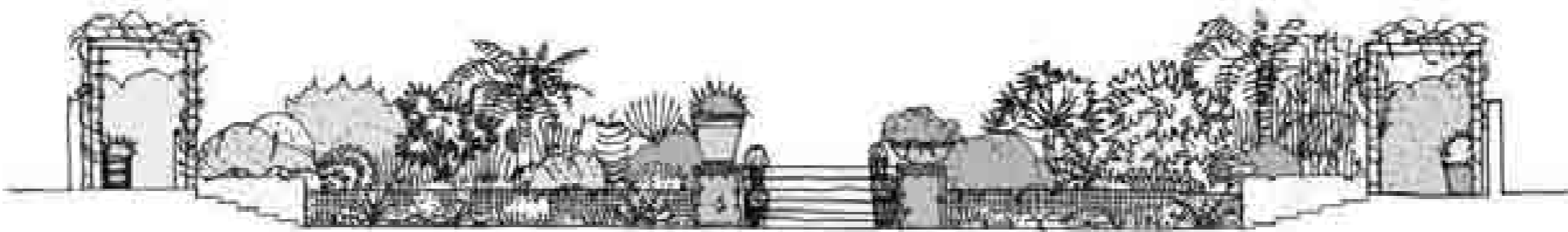




Section AA



Section BB



Section CC

Planting Proposals

Illustrative shade study to inform planting approach

The front garden, facing south south west, is sunnier than the garden to the rear, which is in shade for much of the year. This is cast largely by the building on this site. There would be some reflected light falling on trees to the north of the garden, but in the middle of summer the back garden is something of a sun trap.

In the front garden, the levels fall to the lower ground floor and here, benefitting from trapped sun and air, aromatic plants like lavender should give off a strong perfume. Planting a hedge and pleached tree screen would provide some privacy and street frontage without undue shading.

In the rear garden we need to consider plants that will tolerate shade such as those plants used to living under forest canopies like ferns, but it is still possible to create an exotic quality using some unusual large leaved plants, and hardy fan palms, tree ferns and ground covers. Most of the poor quality self seeded sycamores and white poplars will be cleared from the site allowing more light to the ground, but two self seeded sycamore will be left on the northern boundary of the site. These trees have little ecological value and will continue to grow quickly and seed freely. Ideally they should be removed in time and replaced with smaller, less shady and free-seeding plants that can provide some ecological value in terms of nectar, or berries.



March Equinox 08:00 AM



March Equinox 12:00 PM



March Equinox 04:00 PM



September Equinox 08:00 AM



September Equinox 12:00 PM



September Equinox 04:00 PM

Illustrative study modelled in Sketch-up to inform landscape approach.



Summer Solstice 08:00 AM



Summer Solstice 12:00 PM



Summer Solstice 04:00 PM



Winter Solstice 08:00 AM



Winter Solstice 12:00 PM



Winter Solstice 04:00 PM

Planting Strategy

Microclimate

The front garden has reasonably good solar access through the year and an open aspect, but the rear garden is shady for much of the year. In winter the building casts a shadow for most of the day, but in summer the high sun angle means that it is something of a sun trap if the existing self seeded sycamore trees are removed. This suggest two approaches to planting .

Front of house

At the front of the building clipped plants such as 1.5 metre high yew *Taxus Baccata* hedging behind a low wall to the pavement with pleached lime trees *Tilia x Euchlora* above it to provide screening for residents whilst making a contribution to the street scene. In the Victorian era, lime tree screens above evergreen hedging was a common solution to villa frontages.

On the sloping land to the lower ground floor there is a protected microclimate in which nectar bearing scented and aromatic plants like lavender *Lavandula 'Hidcote'*, and ground cover offering nectar bearing flowers and opportunities for birds like black birds to forage also have the benefit of allowing maximum light to the lower levels, and clear views for surveillance. The front side walls can also benefit from vines trained on wires such as wisteria and honeysuckle.

Private gardens to the rear

To the rear there are two private garden areas, but these are in the deepest shade and so best suited to ferns and 'woodland floor' type species that are happy in low light conditions. These include male fern *Dryopteris fleximas*, the shiny light green harts tongue fern *Asplenium scolopendrium* and ground covers such smaller leaved varieties of common ivy e.g. *Hedera helix 'sagittifolia'* and *'green ripple'*; lesser periwinkle *Vinca minor* which is evergreen and has small blue, white, or purple flowers according variety, and the mid green glossy japanese groundcover *Ophiopogon japonicus* and *Pachysandra terminalis* which form low evergreen mats of foliage, the latter having small white flowers.

In damper areas, the tiny leaves of the light green Baby's Tears or 'Mind your own business' *Soleirolia soleirolii*, is tight knit, shallow rooted growing on well drained substrates such as pea shingle. This is a fast growing deciduous plant that is easily controlled by pulling, and would complement the larger leafed shade loving silver variegated dead nettles and archangel varieties - *Lamium maculatum 'Orchid Frost'*, *Lamium galeobdolon 'Beacon Silver'*, and the tighter *L.g 'White Nancy'*. These can be underplanted with bulbs of the spring flowering snowdrop *Galanthus nivalis* and corms of the hardy small cyclamen *Cyclamen hederifolium* which flowers in the autumn and winter. For scent the winter flowering evergreen Christmas Box *Sarcococca hookeriana humilis* and the aromatic Dwarf Box *Buxus sempervirens stricta* add texture and mid green and grey greens to the palette.

Shared Rear Garden

This area is a continuation of the private space which can be defined by a change in levels and a low retaining wall. The intention is not to fence this division but to use planting for screening, so that the rear garden becomes the 'borrowed landscape' viewed from the lower ground floor apartments.

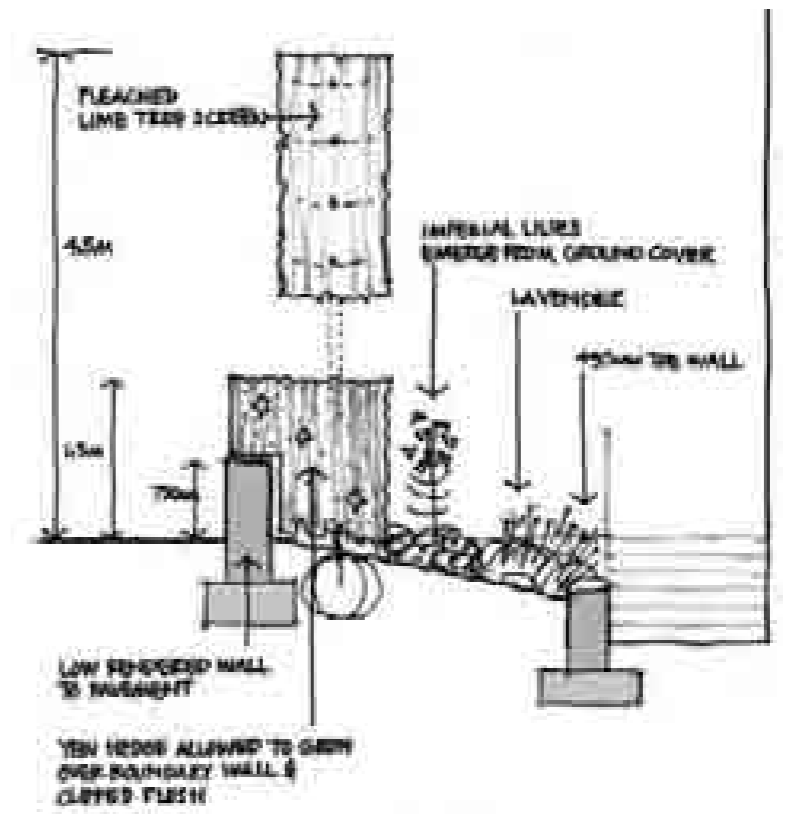
Although shady in winter this area has sun in the summer when the sun is high in the sky and travels further the north. To make a small garden seem larger the two side access points enter diagonally, and the space is filled with lush planting that combines scented plants and those with exotic foliage. Two pavilion pergolas support vines and between them is a glazed verandah to extend the outdoor season and as a shelter for those that must smoke. Ancillary areas are located on the rear boundary - an enclosure for the heat exchanger and another for the gardener.

Planting for wildlife

The variety of the plants listed overleaf flower over a long period and so provide a food source to bees, hoverflies, butterflies and moths from early until late in the year.

Roosting habitat can be provided with bird and bat boxes that are best located on the north sides of the building and garden structures. Bioporous walls and screens - particularly a 'bug hotel' that is also an acoustic fence around the ground-source heat pumps at the rear of the garden provide niches for spider and over wintering for moths and butterflies. These comprise 150-200mm thick mesh walls containing stones, and some timber pieces that support woodlice, stag beetles, spiders, solitary bees, overwintering ladybirds and lacewings - the latter two being aphid eaters.

Ground covers allow foraging song birds like Blackbirds or Thrushes or Robins to find worms, seed bearing plants like clematis are beneficial to Finches. The gardeners enclosure includes bays for composting garden arisings which can be used to improve the soil. This increases moisture retention, macro biota such as earthworms and thus a potential food source for sing birds. It is also a means to pump down carbon into the soil.



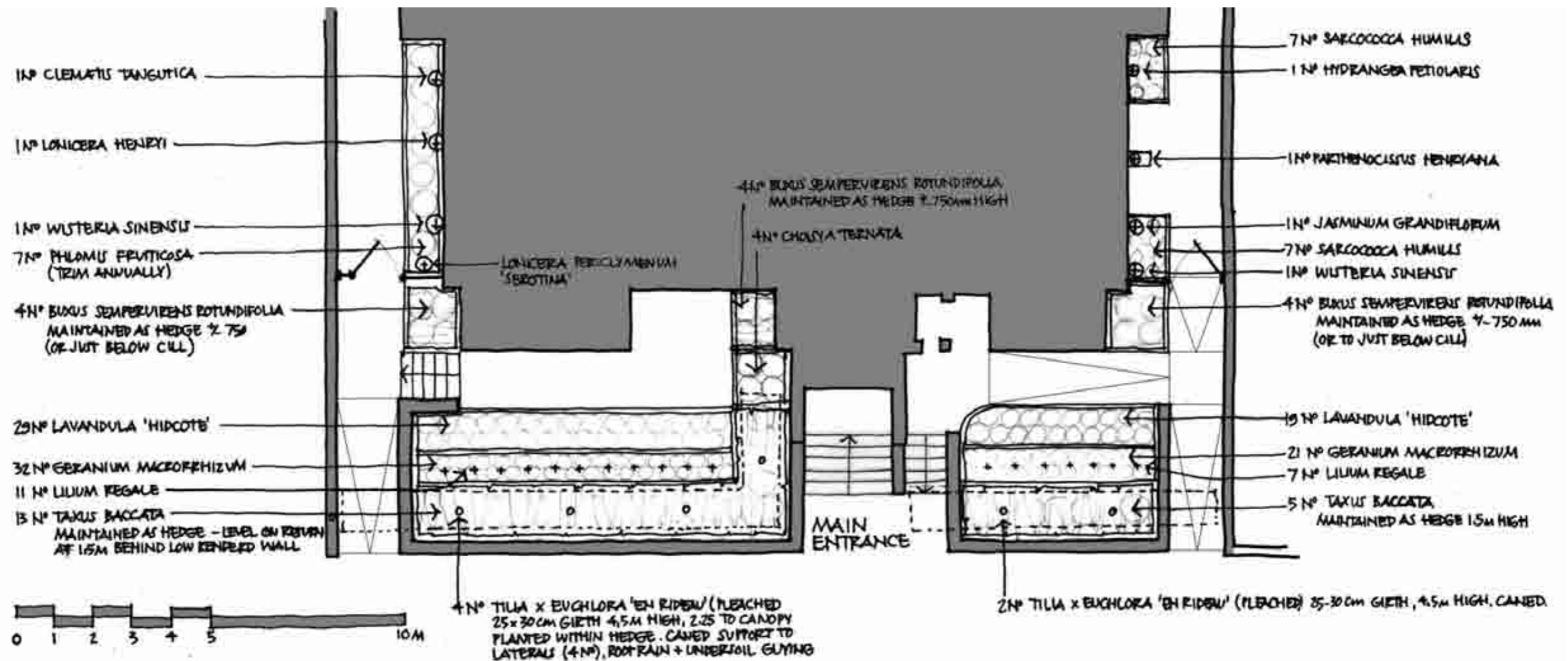
Street frontage typical section

Planting : front garden

The formal frontage has a low rendered boundary wall to the pavement with a 1.5m high yew hedge behind it planted at that height as bare root stock. The footway slopes slightly from west to east and currently there are small steps in the wall - we propose that the wall is level with a maximum height at the eastern end of 750mm, and that the hedge would also be trimmed to be level. The land slopes down one metre to the lower ground floor, a low toe wall 500mm high would prevent soil washing down - and the return on the hedge is to be level with the street frontage. A line of 4.5 metre high pleached lime trees are planted within the line of the hedge, there would be a space of about 750mm between the top of the hedge and the base of the canopy.

Planted at approximately three metre intervals these trees have four laterals supported on bamboo canes that can be removed after a few years when these branches have become stronger. Aromatic and scented plants have been selected in contrasting tones of foliage - silver of the lavender, russet green for the semi-evergreen geranium groundcover, through which a line of heavily scented imperial lilies are planted.

There is a box hedge portal to cill height between the steps/ramp to the lower ground floor and the timber gate to the rear garden / bine and bike stores. Scented plants are located near the bin store - the fragrant winter box (*Sarcococca*) and Jasmine. Climbing plants to be supported on strained stainless steel wires on the blind flank walls include wisteria on each side, the attractive *Parthenocissus henryana*, which is much less vigorous than standard Boston Ivy, an evergreen honeysuckle and the delicate early flowering *Clematis tangutica* that has attractive seed heads. Sparrow terrace boxes and bat boxes can be located on the eastern wall.



Planting : rear garden

Rear shared garden

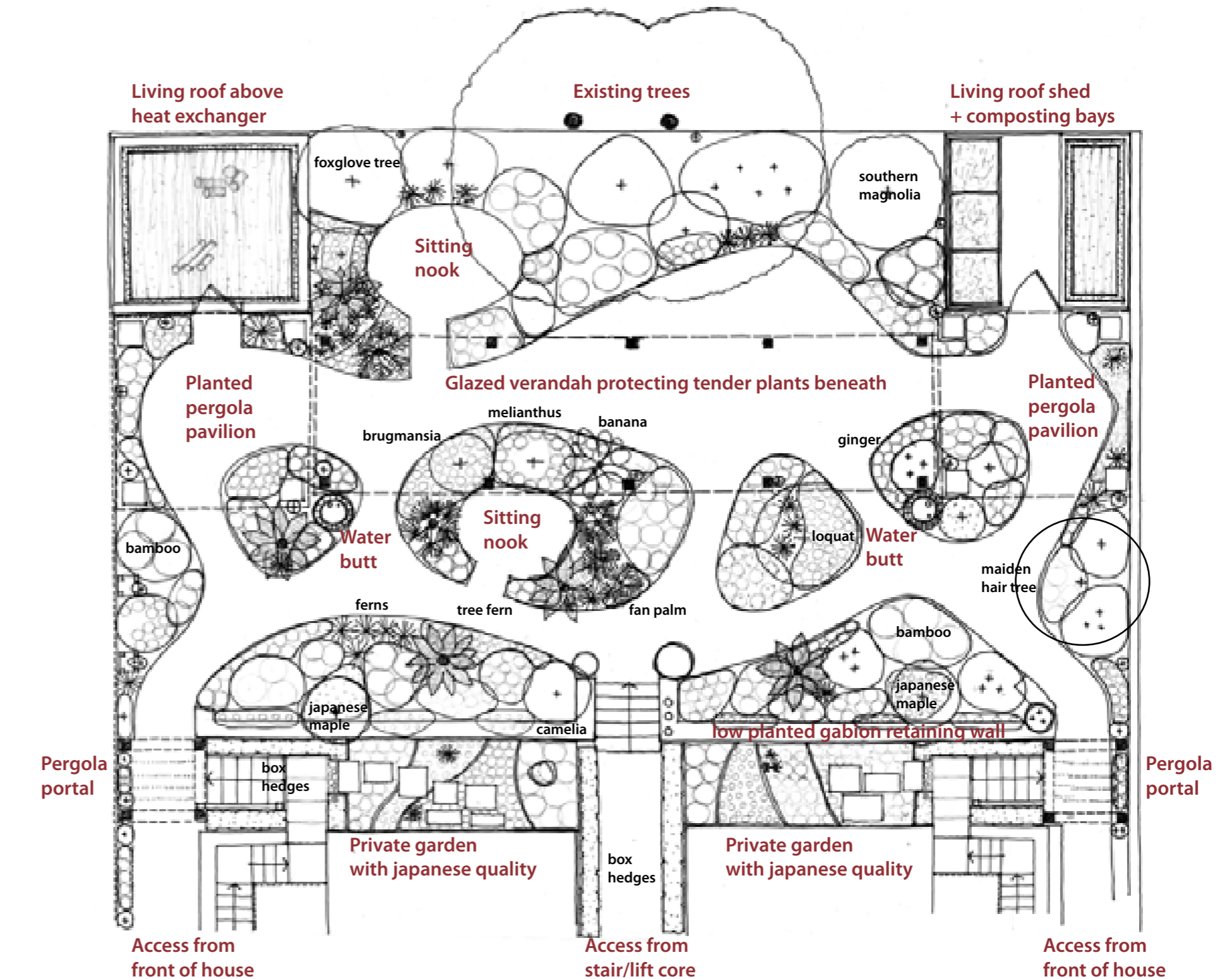
Because this is a sun trap in the morning and middle of summer days, there is an opportunity to use plants with an exotic quality and with scent that will linger and be amplified by still warm air. Plants with nectar, even if nonnative, can be of value to invertebrate life like moths and butterflies, whilst bushy vines can provide nesting opportunities for song birds.

The small garden will seem larger by the combination of the structure of the pergola/verandah that provides three areas for sitting in - one large area of shared eating, and two smaller leafy nooks. The garden comprises an archipelago of planting beds with tight ground cover below more exotic foliage above. Foliage has been selected to provide degrees of complimentary texture and contrast, and with pale green and darker glossy leaves, and flowers that are either white or soft warm hues. These green 'pebbles' are set in a structure of lines of paving perpendicular to the building that carry through to the front of the building. The design is both a lush oasis space and an abstract composition like a parterre to be viewed from above.

The private garden areas to the ground floor apartments are a carpet of low evergreen groundcover including epimedium, pachysandra, ophiopogon and heuchera with 'accent' ferns. Random sized yorkstone flags and rounded cobbles are set into this carpet in the Japanese manner to provide access to the shared garden. A low gabion retaining wall with small leaved ivies and light green 'mind your own business' is the boundary of the private space. Japanese maples, overhang the wall and beyond are evergreen *Mahonia japonica*, Butchers Broom (*Ruscus aculeatus*), camelia and box that can tolerate low light. For some height further back there are clump forming bamboos *Phyllostachys nigra* and tree ferns *Dicksonia antarctica*.

The island plantings are partly straddled by the glazed verandah that provides some shelter for more tender exotic plants that do grow in our climate like the red Ethiopian banana *Ensete ventricosum 'Maurelli'*, the greyish exotic leaves of melianthus, the heavily scented inverted trumpets of brugmansia and a very fragrant variety of ginger *Helychium 'Assam Orange'*. These are coupled with hardy fan palms *Chamaerops humilis* and *Trachycapus fortunei*, the large glossy leaves of the Loquat *Eriobotrium japonica* and the iconic foliage of the Maiden Hair tree *Ginkgo biloba*, under-planted with drifts of shade tolerant ground covers. The loquat is small tree that may flower but rarely sets fruit in the UK - it can be pruned to be a large shrub about 3 metres high. The ginkgo can grow into a large tree in time, but it responds to pruning in winter and might be maintained at 5-6m high. It is deciduous with pale golden autumn colour.

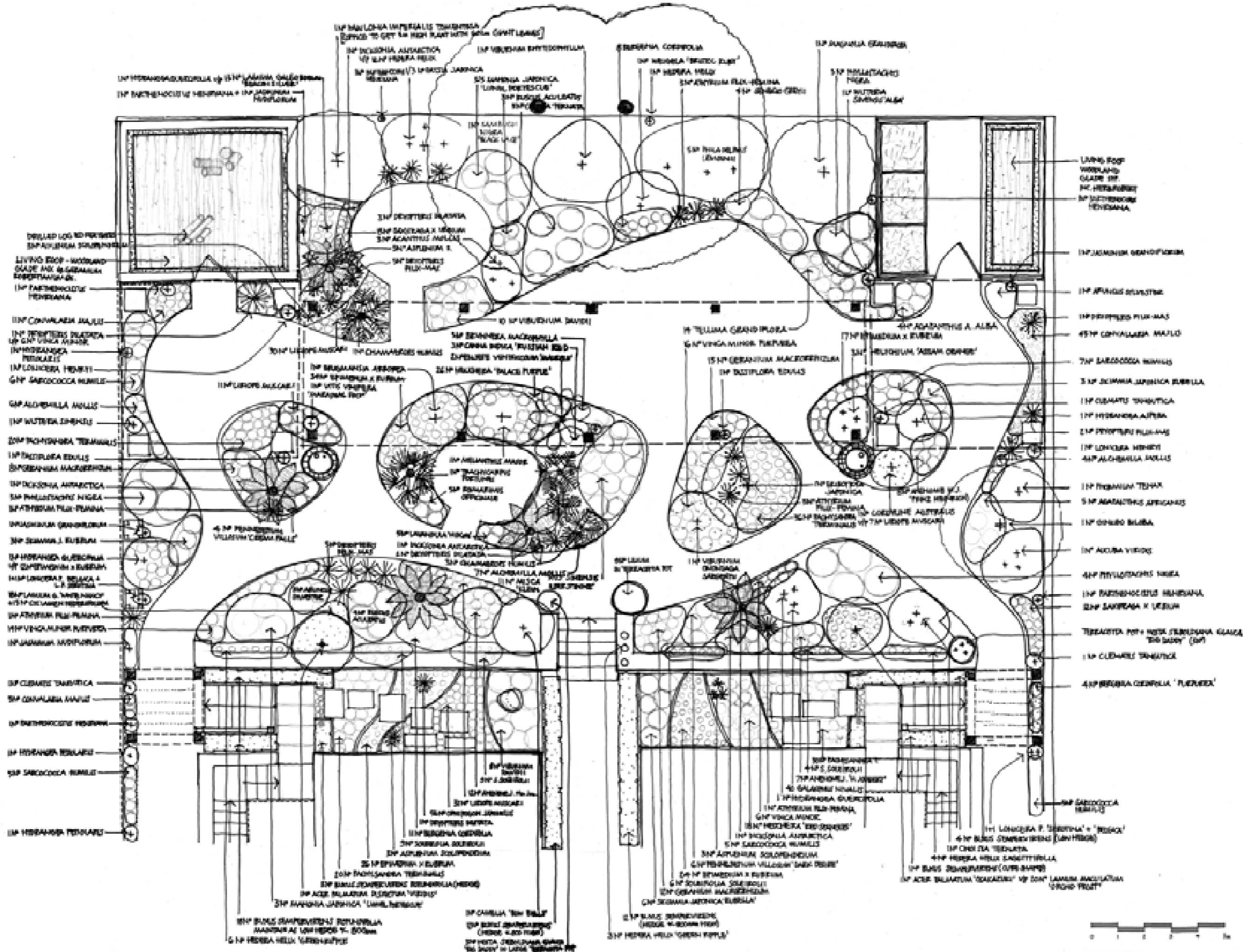
Scented plants include the early and late season honeysuckles *Lonicera periclymenum 'Belgica'*; and *Serotina* - planted together, the evergreen honeysuckle *Lonicera henryi*, Wisteria and Jasmine - to grow over the pergolas. In addition to the exotic brugmansia and imperial lilies, there is scent earlier in the season from the Christmas box, *Sarcococca humilis*, *Mahonia japonica*, *Osmnathus burkwoodii*, and Lily of the Valley *Convallaria majlis*. The heavily scented and evergreen, Mexican orange blossom *Choisya ternata* may



flower twice - in spring and also in early autumn, other scented springtime/early summer flowering shrubs include Mock Orange *Philadelphus lemoinei*, Skimmia and Lavender.

In recognition of the shade there are four varieties of ferns - three with finely cut foliage and one, the harts tongue *Asplenium scolopendrium*, which is light green and shiny. These are located on woodland floor type ground

covers such as the evergreen native Lesser Periwinkle *Vinca minor* which has glossy leaves and blue flowers, glossy leaved Pachysandra that has small white flowers, and reddish tinged matt leaves of *Epimedium x rubrum*. Other low dense ground covers include the large leaved Bergenia, London Pride *Saxifraga x urbium*, and the russet green foliage and small pink flowers of the semi evergreen cranesbill *Geranium macrorrhizum*.



Planting : outline schedule of sizes and densities

The verandah has no sides and is open to planting on the northern boundary. Under the glass we have suggested growing grapes and passion flower *Passiflora edulis*. The Grape vine *Vitis vinifera* will need to be pruned back to the wood every autumn after the leaves have fallen

This plan allows for two sycamores that have been recommended for retention, but it is likely that the roots from these trees will make it difficult to plant. Ideally these trees should be removed, the roots ground up, and the tree replaced with the more graceful, lighter canopied Persian silk tree *Albizia julibrissin*. Sycamores grow fast and seed like crazy - they are not native and so have limited ecological value - they also cast a very heavy shade, so are likely to be a problem in the future. In the main we have located some larger shrubs at the rear of the garden as a back drop - the evergreen southern magnolia *Magnolia grandiflora* 'Goliath' which has large glossy leaves and can take advantage of this sun trap corner - large heavily scented cream flowers up to 30 cm across are borne in late summer. This slow growing shrub can grow in to a large tree but will respond to pruning.

Other larger shrubs along the back are the dependable *Fatsia japonica* that has large glossy leaves and a green ivy like flower that opens late in the season and is therefore a useful source of nectar for bees and hoverflies, and the darker crinkly leaved *Viburnum rhytidophyllum* which has large flat inflorescences. For fun, we have included a foxglove tree - *Pawlonia imperialis*. This has foxglove like candelabra flowers and broad mid green leaves, but if it is coppiced (cut the base) it can send up shoots to three metres in a year and the leaves become elephantine - up to 60 cm across, instead of the normal 12-15cm, but at the expense of not bearing flowers which usually appear before the leaves in early spring. Copping should start once the plant has become established for a year or two.

There are no golden variegated plants, but a few with silver variegation and silver leaves to lighten the textures, and some with copper colouring that add some tonal depth. *Pathernocissus henryana* is less vigorous than standard Boston ivy and has attractive markings on the coppery green leaves and the light yellow flowering *Clematis tangutica* is not only delicate but has very attractive 'old mans beard' style seed head that shine in sunlight.

A large number of plants has been carefully selected for this urban oasis. They are based on experience and recommendations from the RHS. The sizes are and spacings are to provide a well covered garden from day one. Dense groundcover plants will keep down weeds, but from time to time they can be lifted and divided, and at that time compost can be added to the soil. The larger shrubs will need thinning out in years 3-5 - the strongest plant being selected. All shrubs will benefit from an annual trim to keep things in order.

Paved surfaces are to drain into the planting beds, and roof water from the verandah will be stored in water butts. In addition roof water from the apartments may also be stored for hand irrigation.

Plant name	No	Planting size (pot)	Density
Shrubs			
<i>Aucuba japonica viridis</i>	3	10 litre	specimen
<i>Camelia</i> 'Bow Bells'	1	10 litre	specimen
<i>Choisia ternata</i>	12	5 litre	3/m3
<i>Hydrangea aspera</i>	1	10 litre	specimen
<i>Hydrangea quercifolia</i>	3	10 litre	specimen
<i>Lavandula</i> 'Hidcote'	53	3 litre	5/m2
<i>Mahonia japonica</i> 'Lionel Fortescue'	8	5 litre	3/m2
<i>Osmanthus burkwoodii</i>	1	25 litre	specimen
<i>Philadelphus lemoinii</i>	5	10 litre	specimen
<i>Phlomis fruticosa</i>	7	3 litre	4/m2
<i>Rosmarinus officinale</i>	5	2 litre	5/m2
<i>Ruscus aculeatus</i>	7	5 litre	4/m2
<i>Senecio greyii</i>	4	2 litre	3/m2
<i>Skimmia japonica</i> 'Rubella'	12	3 litre	5/m2
<i>Taxus baccata</i> (hedging)	18	rootballed	1.2m high 1m c/c
<i>Viburnum sargentii</i> 'onondaga'	1	5 litre	3/m2
<i>Viburnum davidii</i>	18	3 litre	3/m2
<i>Viburnum rhytidophyllum</i>	1	10 litre	specimen
<i>Weilegia</i> 'Ruby'	1	5 litre	1/m2
Ferns, Grasses & Perennials			
<i>Acanthus mollis</i>	3	5 litre	3/m2
<i>Anenome huphehenis japonica</i> 'Honerine Joubert'	19	2 litre	7/m2
<i>Anenome huphehenis japonica</i> 'Prinz Heinrich'	8	2 litre	7/m2
<i>Asplenium scolopendrium</i>	14	2 litre	groups of 3 or 5
<i>Aruncus sylvester</i>	4	3 litre	5/m2
<i>Athyrium filix-femina</i>	11	3 litre	single or groups of 3
<i>Dryopteris filix-mas</i>	13	3 litre	single or groups of 3
<i>Dryopteris dilatata</i>	7	3 litre	single or groups of 3
<i>Hosta sieboldiana glauca</i> 'Big Daddy'	6	3 litre	groups of 3
<i>Miscanthus sinensis</i> 'Kleine Silberspinne'	11	3 litre	5/m2
<i>Pennesetium villosum</i> 'Cream Falls'	4	3 litre	5/m2
<i>Pennesetium villosum</i> 'Dark Desire'	6	3 litre	5/m2

Plant name	No	Planting size (pot)	Density
Climbers			
<i>Clematis tangutica</i>	4	5 litre	specimen
<i>Jasminum grandiflorum</i>	3	5 litre	specimen
<i>Jasminun nudiflorum</i>	2	3 litre	specimen
<i>Hydrangea petiolaris</i>	4	10 litre	specimen
<i>Lonicera periclymenum 'Belgica'</i>	2	3 litre	plant with L.p. 'Serotina'
<i>Lonicera periclymenum 'Serotina'</i>	3	3 litre	plant with L.p. 'Belgica'
<i>L. henryi 'Copper Beauty'</i>	3	5 litre	specimen
<i>Passiflora edulis</i>	2	5 litre	specimen
<i>Parthenocissus henryana</i>	7	5 litre	specimen
<i>Vitis vinifera 'Marashall Foch'</i>	1	5 litre	specimen
<i>Wisteria sinensis alba</i>	2	10 litre	specimen
<i>Wisteria sinensis</i>	3	10 litre	specimen
Groundcover			
<i>Alchemilla mollis</i>	17	2 litre	7/m2
<i>Bergenia cordifolia</i>	23	3 litre	7/m2
<i>Brunnera macrophylla 'Jack Frost'</i>	3	3 litre	5/m2
<i>Buxus sempervirens rotundifolia</i>	55	litre & as specimens	300mm c/c for hedge
<i>Buxus sempervirens CUBE</i>	1	10 litre	specimen
<i>Epimedium rubrum</i>	113	2 litre	9/m2
<i>Geranium macrorrhizum</i>	98	2 litre	9/m2
<i>Hedera helix 'sagittifolia'</i>	4	1 litre	9/m2
<i>Hedera helix 'green ripple'</i>	22	1 litre	9/m2
<i>Heuchera 'Red Spangles'</i>	18	3 litre	9/m2
<i>Heuchera 'Palace Purple'</i>	20	3 litre	9/m2
<i>Lamium galeobdolon 'Beacon Silver'</i>	13	1 litre	12/m2
<i>Lamium galeobdolon 'White Nancy'</i>	18	1 litre	12/m2
<i>Lamium maculatum 'Orchid Frost'</i>	20	1 litre	12/m2
<i>Liriope muscari</i>	109	2 litre	12/m2
<i>Ophiopogon japonicus</i>	81	2 litre	12/m2
<i>Pachysandra terminalis</i>	106	2 litre	12/m2
<i>Sarcococca hookeriana humilis</i>	42	5 litre	5/m2
<i>Saxifraga x urbanis</i>	25	1.5 litre	10/m2
<i>Soleirolia soleirolii</i>	28	1 litre	12/m2
<i>Tellima grandiflora</i>	14	3 litre	7/m2
<i>Vinca minor purpurea</i>	40	3 litre	9/m2

Plant name	No	Planting size (pot)	Density
Bulbs and corms			
<i>Canna indica</i>	3	-	group
<i>Convalaria majlis</i>	61	-	drifts 20-30 5cm apart
<i>Cyclamen hederifolium</i>	15	-	drifts 10 - 15/m2
<i>Galanthus nivalis</i>	40	-	drifts of 50-100 2-3cm apart
<i>Lilium regale</i>	27	-	as directed Use large high quality bulbs
Specimen plants & trees			
<i>Acer palmatum dissectum</i>	1	rootballed	specimen 1.5m high
<i>Acer palmatum osakazuki</i>	1	rootballed	specimen 1.5m high
<i>Albezzia julibrissin</i>	1	rootballed 18-20cm girth	specimen 4-5m high
<i>Brugmansia arborea</i>	1	5 litre	specimen (under the verandah)
<i>Chamaerops humilis</i>	4	10 - 25 litre	specimen groups of 3
<i>Cordyline australis</i>	1	10 litre	specimen
<i>Dicksonia antarctica</i>	5	50 litre	specimen - 1.5-2.5m stem
<i>Ensete ventricosum 'Mamelii'</i>	2	5 litre	specimen
<i>Eriobotrya japonica</i>	1	25 litre	specimen
<i>Fatsia japonica</i>	3	10 litre	specimen
<i>Ginkgo biloba</i>	1	rootballed 20-25cm girth	specimen 4-5m high
<i>Helychium gardnerianum kalili</i>	3	5 litre	group
<i>Magnolia grandiflora</i>	1	rootballed 20-25cm girth	specimen 4m high
<i>Melianthus major</i>	1	10 litre	specimen
<i>Pawlonia imperiali</i>	1	25 litre	specimen
<i>Phormium tenax</i>	1	25 litre	specimen
<i>Phyllostachys nigra</i>	14	10 litre	groups of 3 or 5
<i>Sambucus nigra purpurea 'Black Lace'</i>	1	10 litre	specimen
<i>Tilia x Euchlora</i>	6	rootballed 25-30 cm girth	(pleached 4 laterals)
<i>Trachycarpus fortunei</i>	1	50 litre	specimen 1.5-2.5m stem

Planting palette : exotica



Example: Tree fern, fan palms, cordyline & bamboo etc. growing well on the shady North East side of the Engleback house



Cordyline australis



Fatsia japonica



Phyllostachys nigra



Ginkgo biloba



Pawlonia imperialis
on shady north side of St James Square)



Melianthus major



Chamaerops humilis



Trachycarpus fortunei



Magnolia grandiflora



Phormium tenax



Ensete venticosum



Sambucus nigra 'Black Lace'



Hedychium gardnerianum



Canna indica



Tilia x Euchlora (pleached)



Acer palmatum



Eriobotrya japonica - Loquat



Brugmansia arborea

Planting Palette : climbing plants



Vitis vinifera 'Marshall Foch'



Wisteria sinensis alba



Lonicera henryi 'Copper Beauty'



Lonicera periclymenum 'Serotina'



Jasminum grandiflorum



Parthenocissus henryana



Hydrangea petiolaris



Clematis tangutica

Planting Palette : shrubs



Viburnum rhytidophyllum



Weigelia 'Ruby'



Hydrangea quercifolia



Choisya ternata



Buxus sempervirens



Philadelphus lemoinei



Elaeagnus ebbingei



Viburnum plicatum 'Mariesii'



Senecio greyii



Mahonia japonica

Planting Palette : ground covers for shady areas



Vinca minor



Ophiopogon japonicus



Bergenia cordifolia



Heucher brizoides 'Red Spangles'



Bergenia cordifolia



Lamium galeobdolon 'Beacon Silver'



Geranium macrorrhizum



Epimedium x rubrum



Liriope muscari



Alchemilla mollis

Planting Palette : grasses & herbaceous perennials



Anemone hupehensis japonica
'Honorine Joubert'



Acanthus mollis



Agapanthus africanus



Dryopteris filix-mas



Asplenium scolopendrium



Aruncus sylvestris



Miscanthus sinensis



Pennisetum

Paving, Lighting, & Furnishings

Garden paving, lighting and furnishings

We propose rich textures for the paving in the garden - Galvanised steel edging used to achieve the sinuous curves in open areas with recycled setts, blue stable blocks that have eight divisions per block for a finer texture in bands that can continue front to back on the property to 'hold' the archipelago of planting islands. Ideally, the bricks and setts should be reclaimed materials so that they have a patina of age. Light grey granite will contrast with the darker blue brick and in a 'hot spot' under the verandah, a warm soft brick 'fifth island' using - for example Lambs Chartwell pavers - these could be new bricks. Alternatively, the effect could also be gained from using recycled red granite setts if available. The Shape can still be formed with the galvanised steel edging with bricks laid in stretcher bond to conform with the paving direction of the other materials. Side access paths and the ramps to the front of the building can carry this banding through to the front of the property. Broken crockery mulch can be used for the tops of large terracotta pots containing hostas and imperial lilies to discourage snails, and in the planting edges between fence and path as needed. The paved areas would all drain to the planting areas.

The private outside spaces would employ re-used stone flags and cobbles that are set on dense low groundcover in the Japanese manner.



Mixing blue stable blocks with granite setts



Lambes Chartwell pavers for the 'hotspot'



Japanese style flags and cobbles



Setts layed with spaces to allow water percolation



Non-slip timber deck



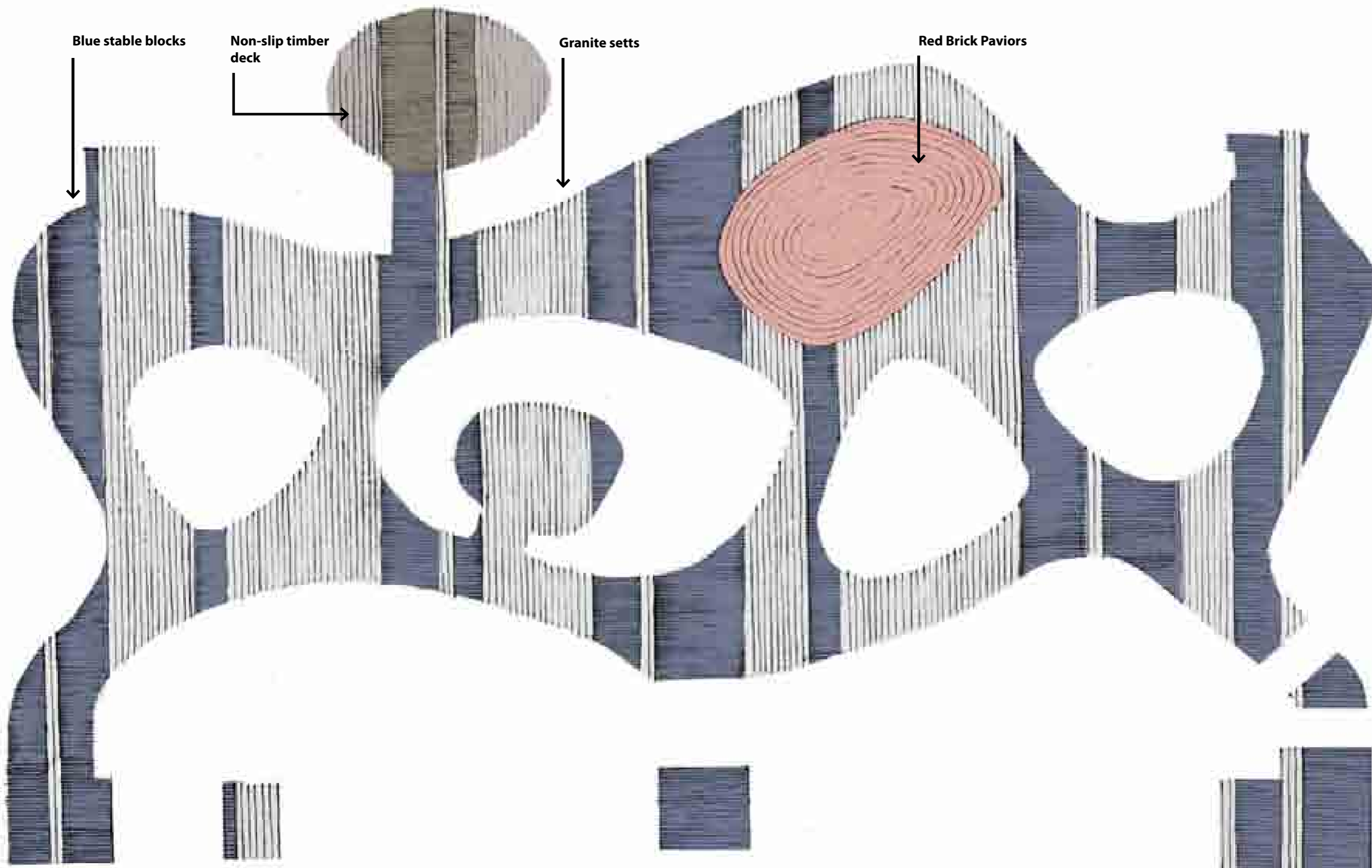
Reclaimed granite setts
image: Purple tree products



Reclaimed blue stable blocks
image: Cotswold Recalvation Company Ltd

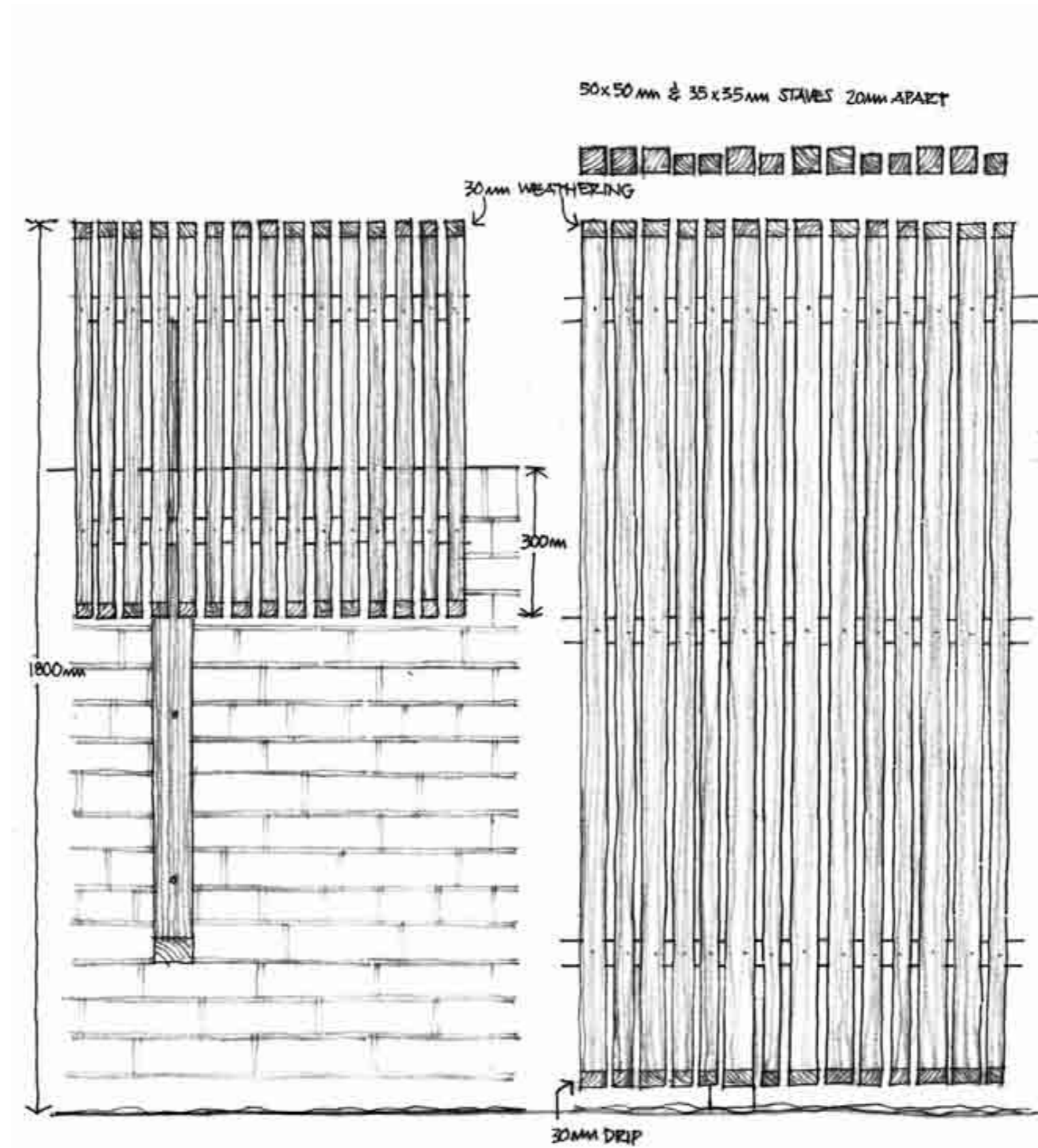


Crushed crockery mulch



Boundary fence precedent images

Fencing to the neighbours has to be 1,8 metres high for security - vertical timbers are hard to climb, but also provide the vertical texture that will complement the planting. The intention is that this should become silver with weathering. The 35x35 timbers would be planed each section is a rhomboid - on fixing each section is rotate to create a texture - as shown in the top photograph left.





Bioporous toe wall to raised area



Vertical timber screen fencing is difficult to climb.
Doors to heat exchanger/Garden store can be incorporated.



planed timber rotated to gain a texture

Building integrated vegetation

Greening walls and some roof areas is part of the plan to enhance biodiversity. We propose that the garden tool shed and the heat exchanger enclosure may have biodiverse living roofs.

In general wall planting on the building is proposed on strained wire or mesh supports for ease of building maintenance - the vines being planted in the ground. At the rear of the building there is an opportunity to use the tree box green wall system as a biodiverse vertical rain garden intercepting and filtering roof water, which can then be stored in storm crates as part of WSUD.



Biodiverse living roofs to garden store and heat exchanger unit

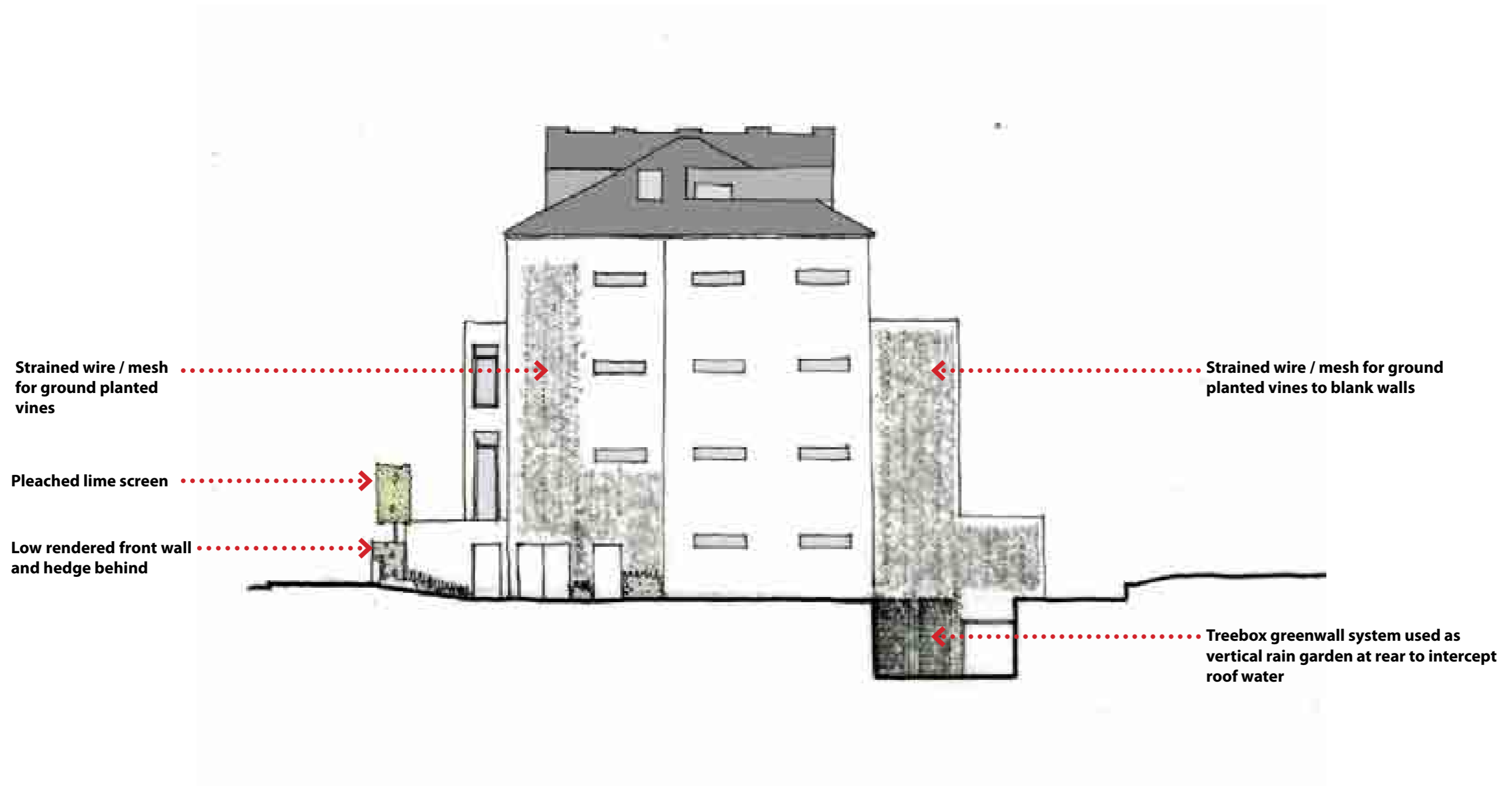


Strained wire / mesh for ground planted vines to blank walls



Treebox greenwall system used as vertical rain garden at rear to intercept roof water

Proposed south-east elevation showing integrated vegetation strategy



Garden furnishings and lighting

The richness of the rear garden will be enhanced by an eclectic approach to furnishings. Metal cafe chairs and tables can be mixed with timber lounging chairs. At some strategic points such as tops of stairs large Tuscan terracotta pots with fan palms will add some warmth to the generally shady rear garden. Rain water can be harvested from the glazed verandah into oak water butts at each end. There is the potential to fit / retrofit the verandah with thin film PV array.

Lighting should be low level, and bat friendly low energy non-UV emitting LEDs located in steps and to floor wash paths. Strategically placed LED up lighters can pick out palms to tree ferns. Access to the rear would be PIR activated LED security/courtesy lighting.



Comfortable timber furniture





Oak water butt



Tuscan terracotta pots



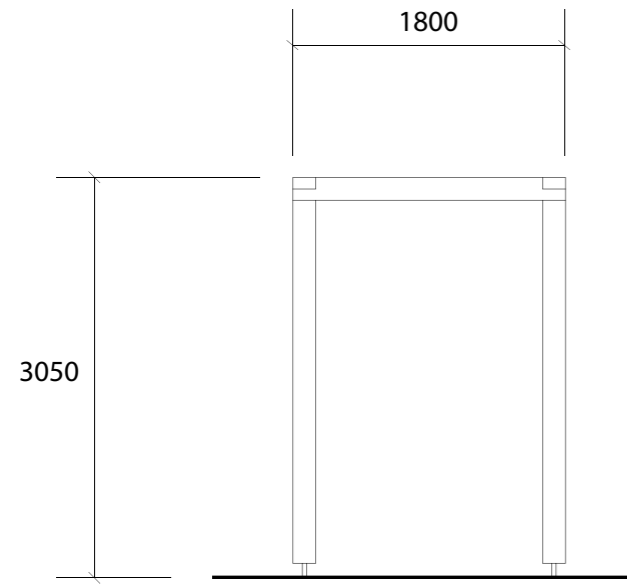
Potential for thin film PV glazing to verandah



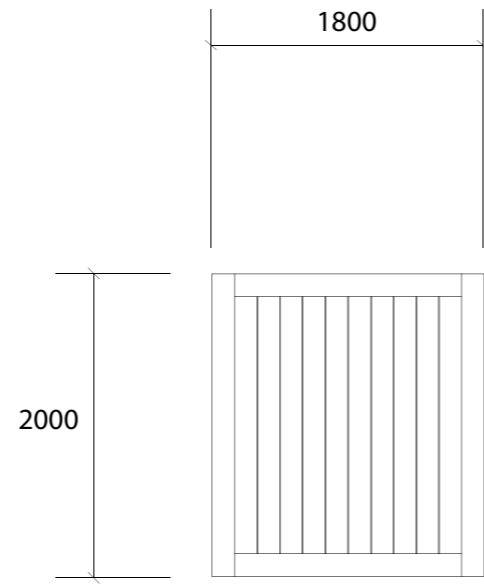
Low key LED lighting for stairs, floor washing with bollard lighting in planting and LED spots for some strategic plants



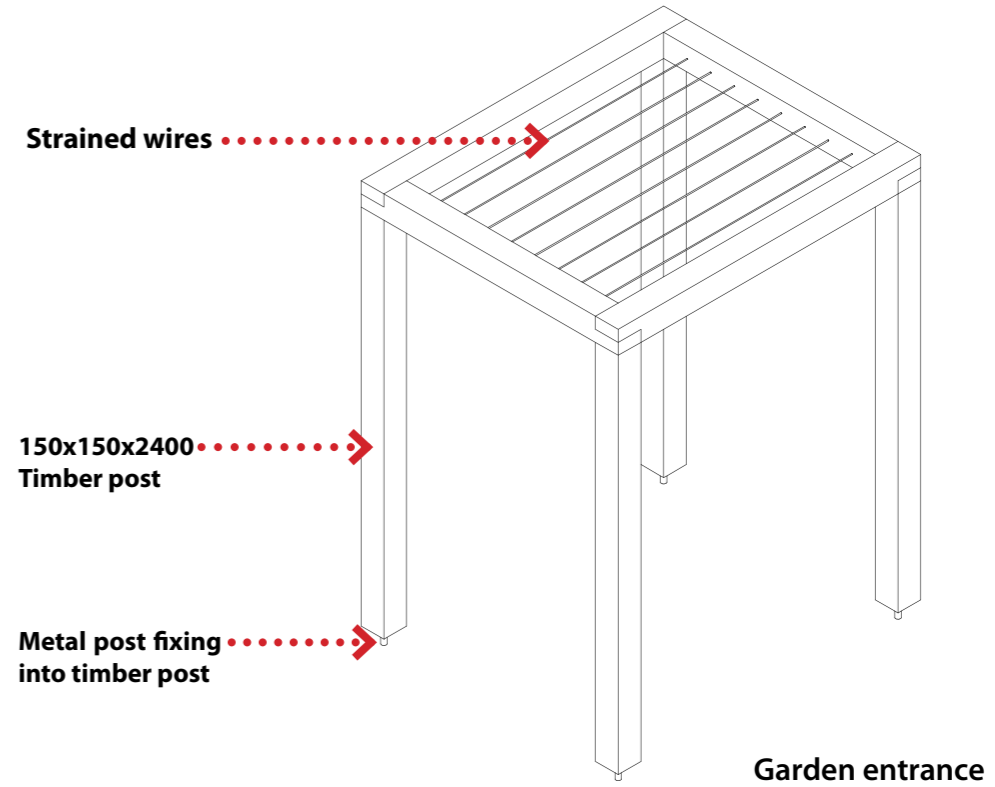
Urban Oasis - Structures



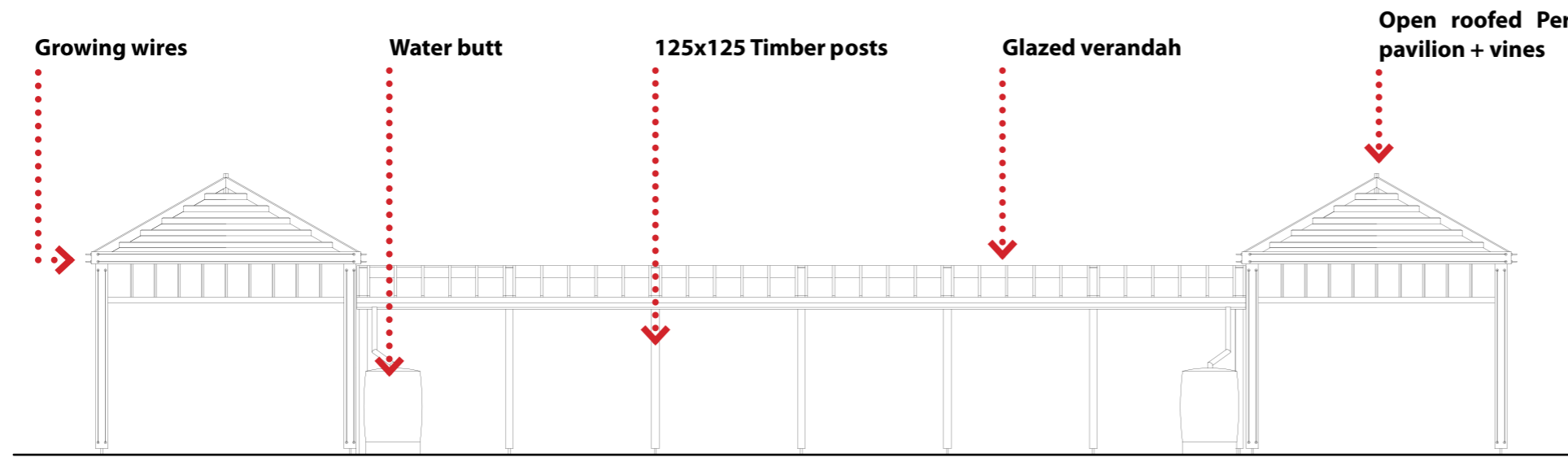
Garden entrance portal elevation 1:50



Garden entrance portal plan 1:50



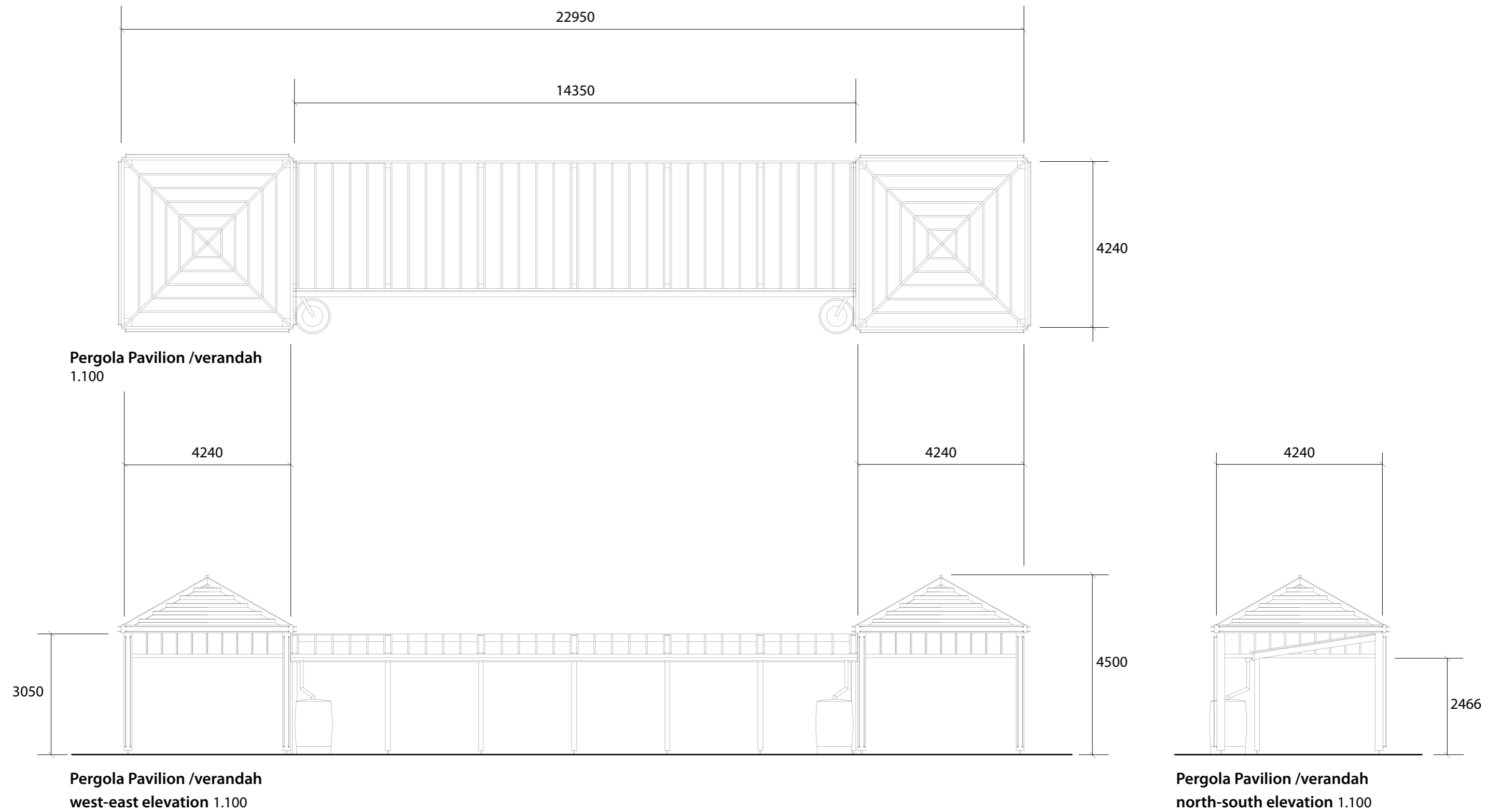
Garden entrance portal isometric 1.50



Pergola Pavilion/verandah west-east elevation 1.100



Pergola Pavilion /verandah north-south elevation 1.100



Urban Oasis - Living roof garden enclosures

For biodiversity value we proposed living roofs to an open enclosure that may accommodate the exchanger unit on the north west corner (the 1.8m high stave fence forms the enclosure, the roof is supported on four posts) and a smaller lockable enclosure for garden tools on the north east corner. The substrate depth will vary from 80-120mm, and drilled dead wood would be located in the centre for invertebrate value. A nesting box can be incorporated on the north side.

Western
Roofed
Enclosure

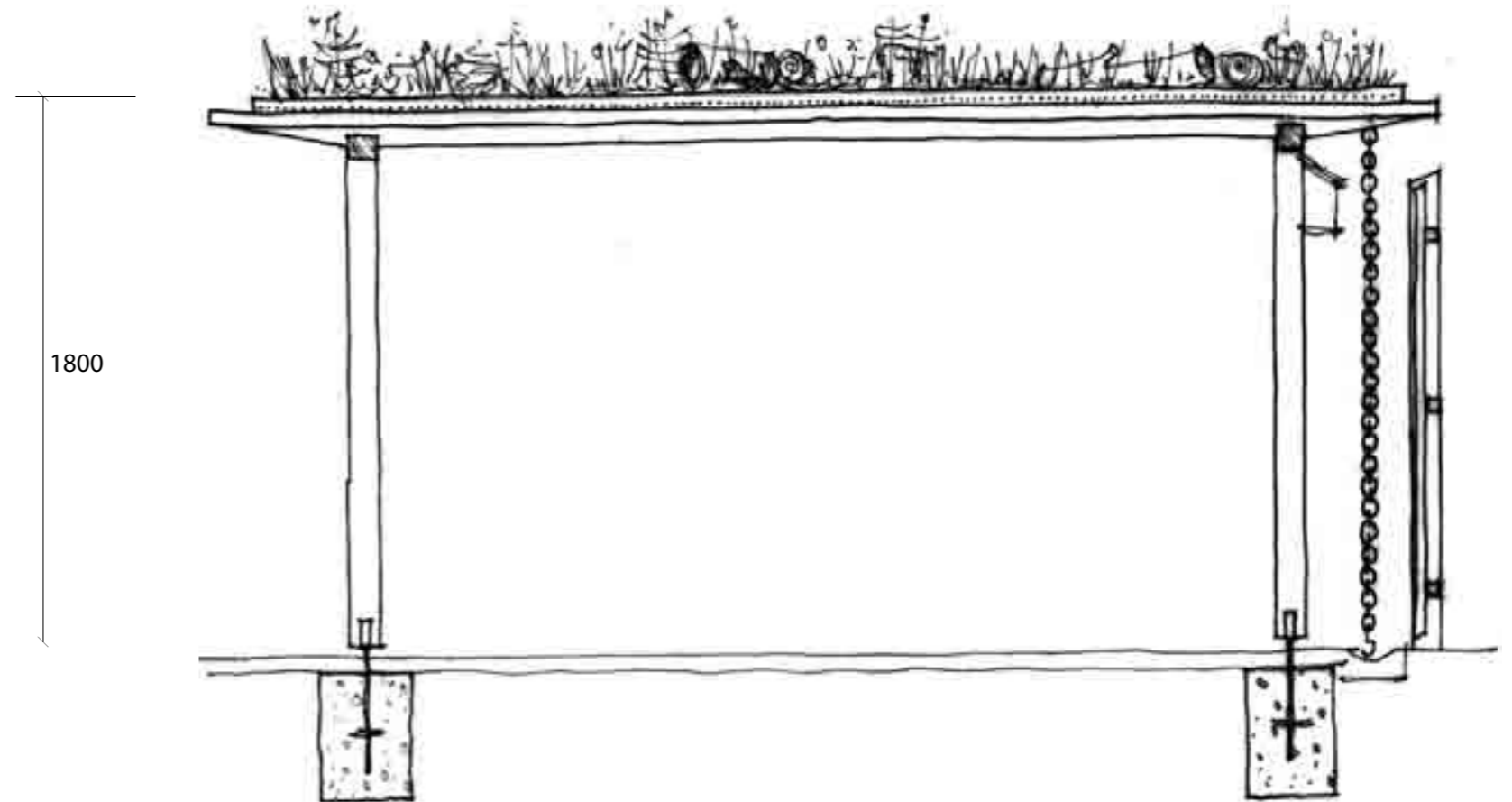
Eastern
Roofed
Enclosure



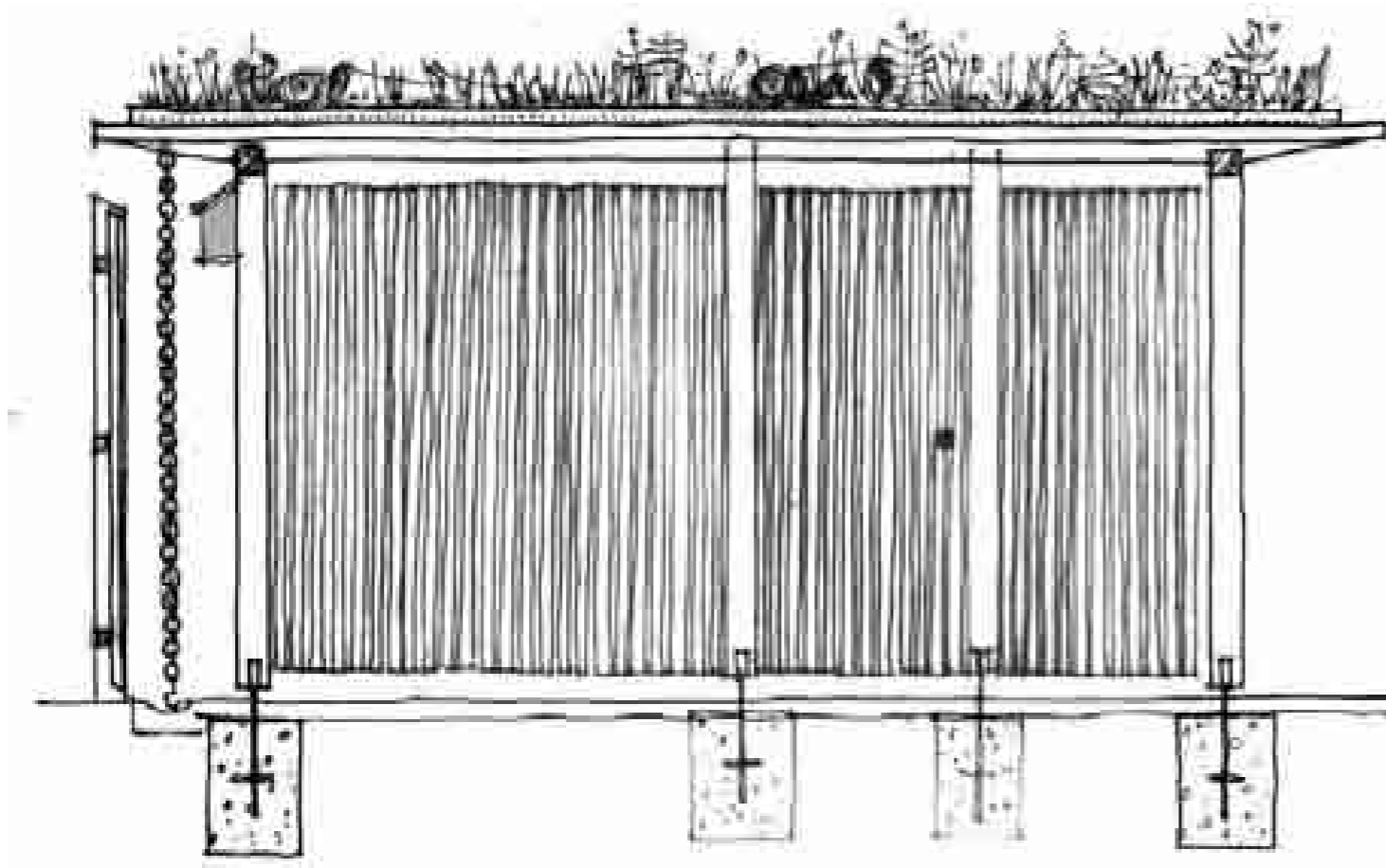
Location of living roofs



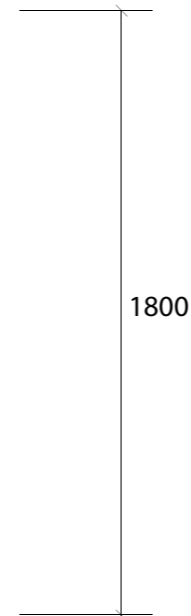
Nearby example of green roofed shed



Western garden enclosure green roof



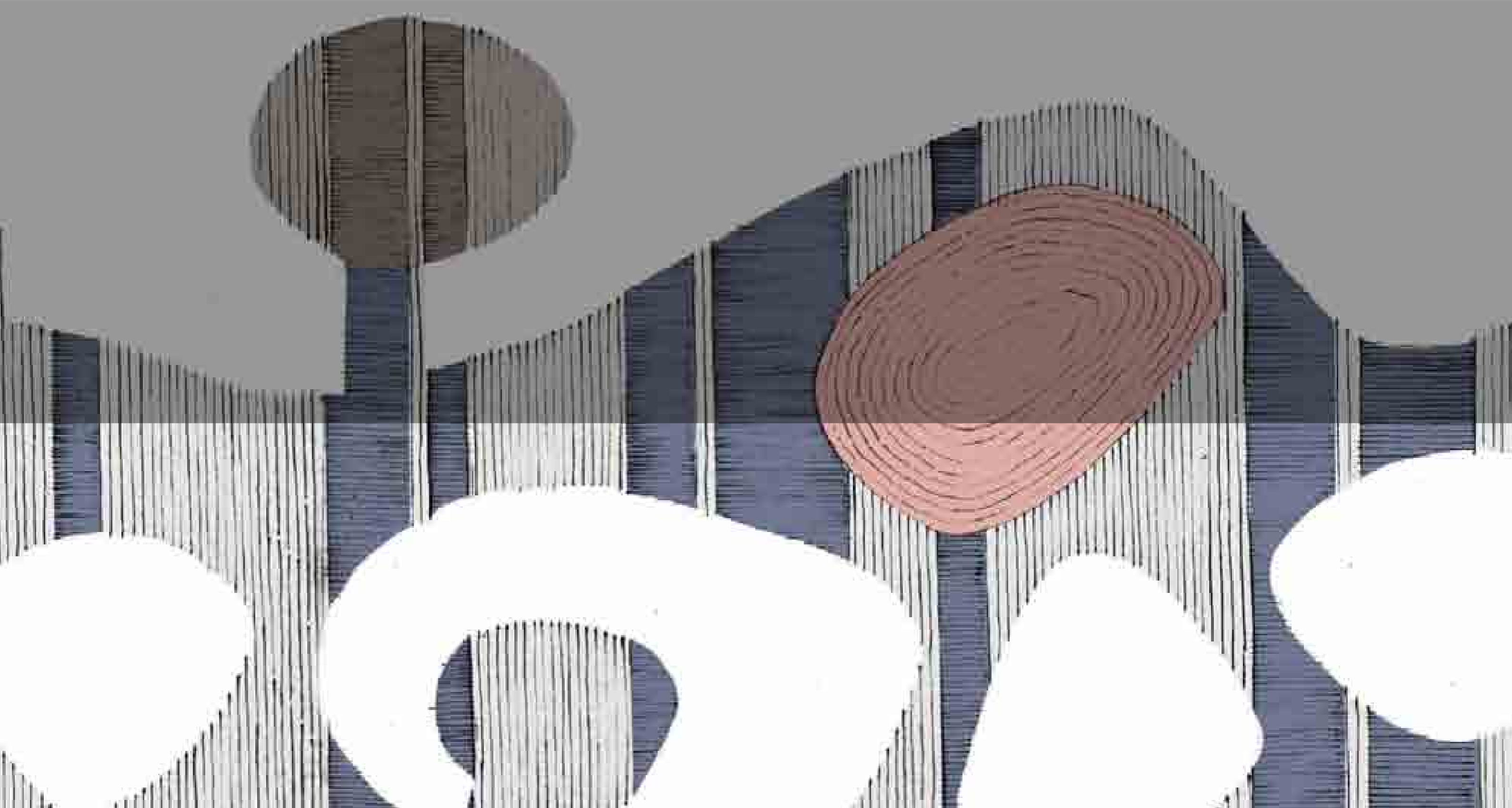
Eastern garden shed roofed enclosure



Green roofed shed



Drilled deadwood on living roof



studioengleback

Studio Engleback
245 Upper Grosvenor Road
Tunbridge Wells, Kent
TN1 2EJ
United Kingdom

t: 01892 538 537
f: 01892 538 438
e: luke@studioengleback.com
w: studioengleback.com