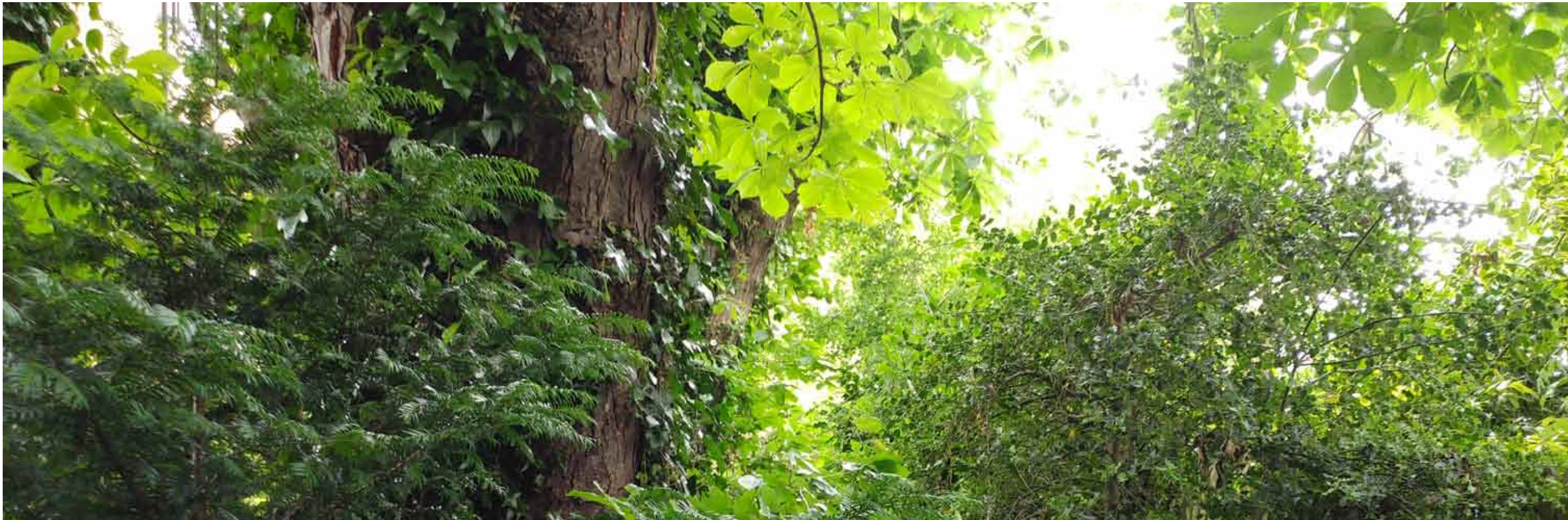




COPPETTS WOOD, Coppetts Wood Road, Muswell Hill

Biodiversity Strategy, 16 September 2016

Residential Proposal on behalf of Catalyst Housing Limited

Project description - Demolition of all existing buildings and redevelopment to provide 80 residential units (C3 use), comprising: 69 flat apartments across 3 building blocks rising from 3 and 4 storeys to part 5 and 6 storeys and 11 houses, rising from 2 to 3 and a half storeys, together with associated infrastructure, vehicular and cycle parking (subterranean and ground), public realm and landscaping works.

This report has been produced in support of and to be read in conjunction with Conran & Partners drawings & reports

Contents	Page
•Ecology Summary	2
•Ecological Mitigation Strategy	3
•Ecological & Biodiversity Strategy	4
•Habitat Areas	5
•Tree Survey Summary	6
•Existing Site Trees	7
•Existing Site Trees - Northern Boundary Trees retained	8
•Tree Planting Strategy	9
•Tree Strategy Species & Specification	10
•Tree Planting Implementation Strategy	11
•Tree Protection Strategy	12
•Planting Strategy	13
•Biodiverse Roof Strategy	14

Ecological Summary

An Updated Ecological Assessment was undertaken at Coppetts Wood Hospital, Coppetts Road, Muswell Hill, London N10, during June 2016 by ASW Ecology following the original assessment made in October 2014.

Following the assessment the main protected species potential at the development site are now considered to be: bats and breeding birds. No reptiles were shown to be present during the Spring 2016 reptile survey, and this infers a lack of connectivity to the nearest reptile survey to the site.

It is now known that there are a number of active bird nests at the development footprint, mainly in the derelict buildings, with the occasional nest in the shrubs and trees too.

There are proven bat roosts also present in three of the buildings at this site, from other surveying also undertaken by Andrew Waller, ASW Ecology. All of these bat roosts belong to common pipistrelle.

Various recommendations have been made based on the findings of ecological assessment and the separate specialist follow-up surveys now completed at the application site. See details below.

Summary of surveys undertaken

A Reptile Survey was undertaken at Coppetts Wood Hospital during April 2016.

Results: No reptiles of any species were found at all during any of the seven survey visits at the proposed development footprint at Coppetts Wood Hospital. Suitable weather conditions were present throughout the survey, and all habitats represented within the overall survey area were well sampled for reptiles.

Recommendations:

Reptile watching brief during all development works

It would still be a sensible precaution for all contractors to be fully aware of the legal status of reptiles, during all clearance and demolition works at the proposed development footprint.

A Breeding Bird Survey was undertaken at Coppetts Wood Hospital, Spring 2016,

Results:

A total of fourteen bird species were recorded during the four breeding bird survey visits. At least nine occupied bird territories found in total at the site. From this it can be concluded that there were six breeding bird species at the survey site. No rare, uncommon or Schedule 1 bird species were heard or seen at any time during this bird survey. The overall site was therefore found to have a good range of bird species present, but with no exceptional bird species or assemblages present, that would make this site more valuable to birds, compared to other similar sites in Greater London.

Recommendations:

It is recommended that as a key mitigation measure, high quality Schwegler woodcrete nesting boxes should be installed on suitable trees or buildings within the survey site, and spaced suitably apart. This would boost the nesting opportunities for bird species at the site and be a realistic biodiversity enhancement to increase the value of the overall site for birds. A selection of high quality nest boxes could be installed, including some or all of the following: Schwegler 1B Nest Box with 32mm hole, Schwegler 1B Nest Box with 26mm hole and the Schwegler 2H Robin Box. A Sparrow Terrace box could also be added to the building post completion to replace lost niches in existing buildings.

A Bat Emergence Survey was undertaken at Coppetts Wood Hospital during Spring 2016

Results: A total of three separate common pipistrelle (*Pipistrellus pipistrellus*) bat roosts were found. Common pipistrelles in small numbers were using the dense ivy cover of the old chapel for roosting. The hospital building at the NW area of the site also had common pipistrelles using the dense ivy cover on the eastern and northern aspects for roosting. The western aspect of the main hospital complex also had common pipistrelles roosting in small numbers under damaged roof tiles and hanging tiles, which is very typical of this adaptive bat species. The other derelict hospital buildings at this site had no evidence that they were being used by roosting bats and some had clearly no potential for this at all. No evidence of roosting within the roof voids of any of the buildings.

Recommendations:

A European Protected Species Mitigation Licence (EPS) (under the 2010 Regulations) for Bats in respect of development will therefore be required from Natural England to permit the predicted loss of bat resting places during the demolition of the hospital buildings.

Bat Impact Mitigation Scheme

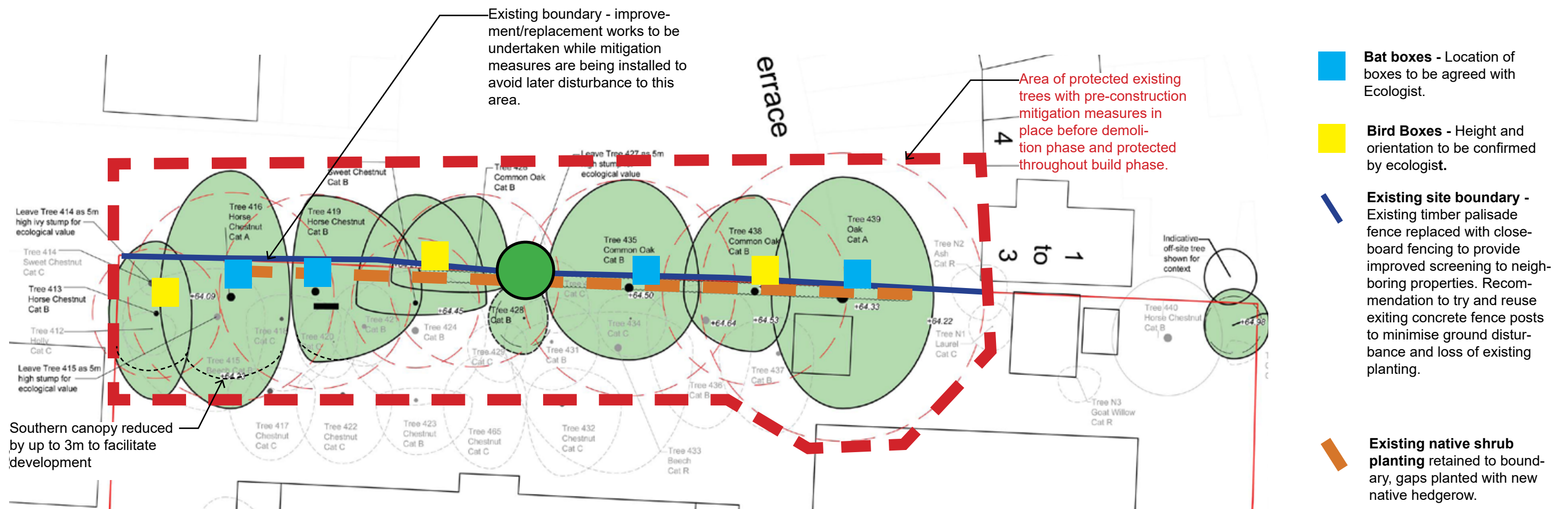
Installation of 8x Schwegler 2F Bat Boxes on mature trees at this property - The mature trees at the property are ideal for these bat boxes. Common pipistrelles, soprano pipistrelles, brown long-eared bats and other bat species will use these bat boxes for roosting purposes, and are appropriate mitigation for the low conservation status roosts present. Eight such boxes can be placed on at least four mature trees, which will be secure and undamaged during all of the proposed works.

Timing of future demolition works

Usually, late summer/early autumn e.g. late August/September/October or early spring e.g. April/May, are ideally the best times to work on such buildings, as this avoids the main bat breeding season. As Bats are not over wintering in the locations found, demolition could be undertaken over the winter period once the mitigation licence has been granted.



Ecological Summary



Early Mitigation Strategy - Prior to demolition

- Fell trees approved for removal and clear vegetation during September to January to avoid the bird nesting season. It would be good practice for a bird watching brief to be undertaken by an experienced consultant ecologist, so to check all features within the construction zone for any early or late nesting birds, before works begin.
- Install 8 Bat boxes a minimum of 4 existing mature trees once tree removals have been undertaken, but before demolition phase. Location of boxes to be agreed with Ecologist.
- Install a series of bird boxes to create nesting opportunities for a range of species mitigating for the loss of potential nesting opportunities with in existing buildings or removed vegetation. Boxes with open fronts, 32mm & 28mm diameter holes will be installed on existing mature trees
- If appropriate external access points of the buildings to fitted with one-way excluders by a licensed bat consultant before commencement of demolition works. Note: A European Protected Species Mitigation Licence (EPS) will be required from Natural England to permit the predicted loss of bat resting places during the demolition of the hospital buildings



Existing mature tree belt to northern site boundary to incorporate bat & bird mitigation measures

Ecological Mitigation Strategy



Bat boxes - 8 boxes installed on a minimum of 4 existing mature trees once tree removals have been undertaken, but before demolition phase. Boxes to be protected during construction phase along with tree protection measures. Location of boxes to be agreed with Ecologist.

Bird Boxes - A series of boxes to create nesting opportunities for a range of species. Boxes with open fronts, 32mm & 28mm diameter holes will be installed on existing mature trees and Sparrow terrace boxes new buildings post completion. Height and orientation to be confirmed by ecologist.

Existing native shrub planting retained to boundary, gaps planted with new native hedgerow. 2m strip will be setout as a maintenance access only which will protect new and existing trees and planting and ensure they can be maintained where required.

Existing trees retained
Refer to Arboricultural survey & report

Proposed tree planting - refer to tree strategy

Proposed native hedge planting

Biodiverse roof - refer to biodiverse roof strategy



Key:

- Site Boundary Line
- Biodiverse Green Roof (incorporating PV panels)
- Amenity grass
- Native & wildlife beneficial planting
- Native hedgerow
- Private gardens
- Rain Garden

Existing Habitat Areas

Bramble scrub/ Shrubs	1486m ²
Grass areas with ruderals	712m ²
Total	2121m ²
Trees	64 no. + 10 off-site on boundary
Building footprint	2349m ²

Proposed Habitat Areas

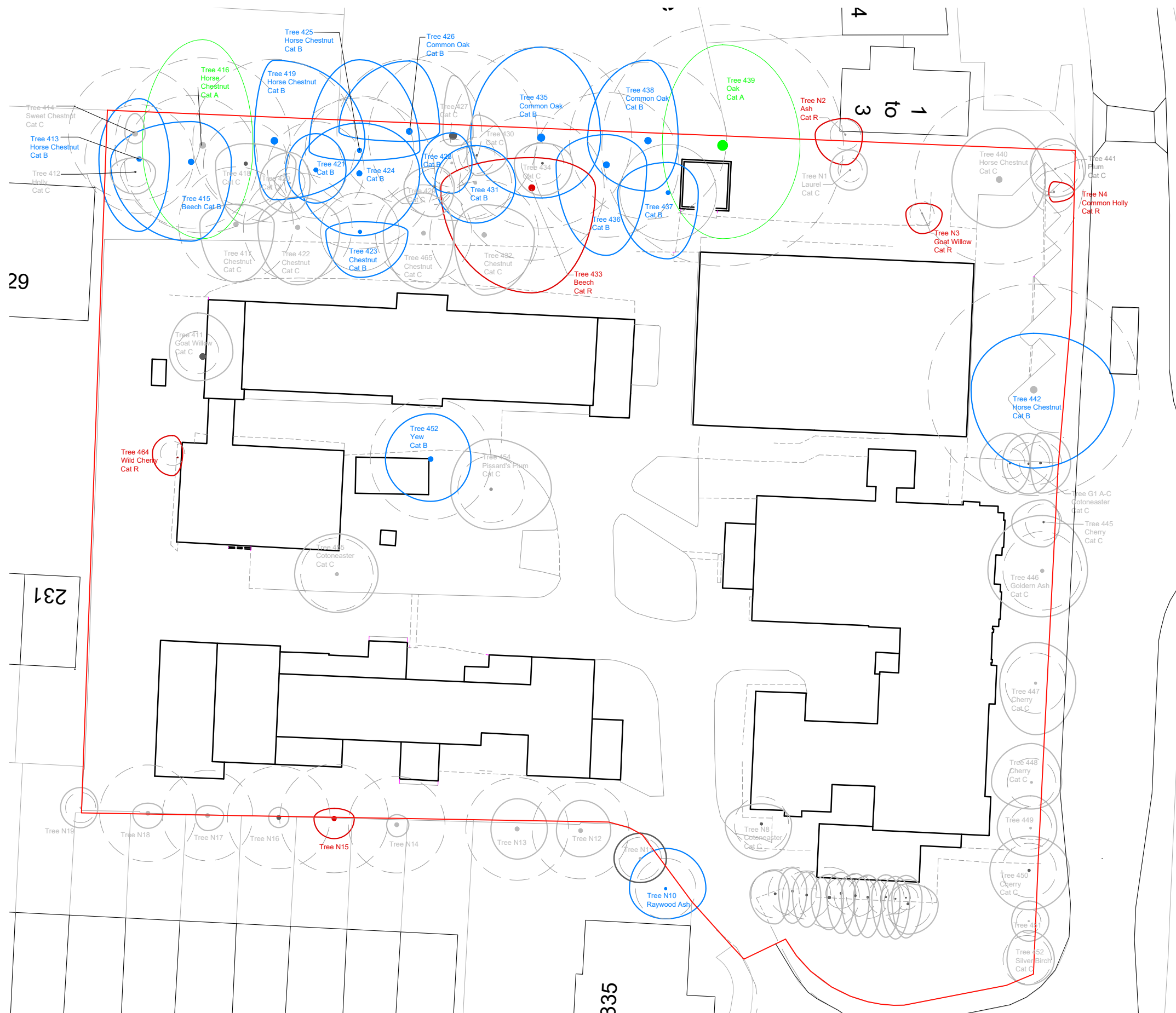
Amenity Grass	306m ²
Biodiverse Green Roof (incorporating PV panels) vegetated with neutral grassland	1465m ²
Native Hedgerow (including areas of retained native scrub/shrubs)	226m ²
Private front and rear gardens	1385m ²
Native & wildlife beneficial planting areas	341m ²
Rain garden	85m ²
Total Area	3808m ²
Building Footprint (minus Green Roof above)	1034m ²
Trees	64no. + 11 no. Existing trees retained. There are 10 off-site on boundary

Quantitative Analysis:

The proposal will see an increase in many habitat areas from those present on the site currently. The proposed biodiverse green roof will create a substantial area of neutral grassland which is far larger than the existing mainly amenity grass areas. Although there is some loss of existing scrub vegetation the overall area of vegetated wildlife beneficial planting increases across the site. The overall number of trees will be greater across the site than currently and will have a greater diversity of species.

Habitat Areas

Coppetts Wood Hospital Site - Landscape - Ireland Albrecht Landscape Architects- 16.09.16



 Site Boundary/ Phase line

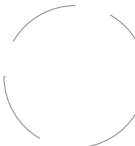
EXISTING TREES:
Tree Numbers coordinate with Arborhelp Tree Survey.

 Category A trees - 2 no.

 Category B trees - 17 no.

 Category C trees - 49 no.

 Category R trees - 6 no.

 Root Protection Area - Refer to Arborhelp Tree survey and report.

Total trees in survey area - 74no.
Total trees in site area - 64no.

Summary of Tree Survey

There are 2no. Category A trees on site with the majority of trees being Category C.
The group of trees to the northern boundary is also of value as a landscape screen.
The visually significant trees 440 & 442 on Coppetts Road have some evidence of disease and are described as a category C & B trees respectively, Although these trees are of some landscape value they are of low arboricultural value and have limited future contribution.

A tree survey compliant with BS5837 was carried out in July 2016 by Arboricultural Consultant, Mark Clews, Arborhelp. Please refer to Arborhelp's Tree Report for full survey details.

Tree Survey Summary

Coppetts Wood Hospital Site - Landscape - Ireland Albrecht Landscape Architects- 16.09.16



A - Coppetts Road on the junction with Martins Walk - looking towards to tree no.442 & 440



Key Plan



B- Boundary trees to rear gardens of Osier Crescent



C - Existing low quality trees along northern tree belt to be removed

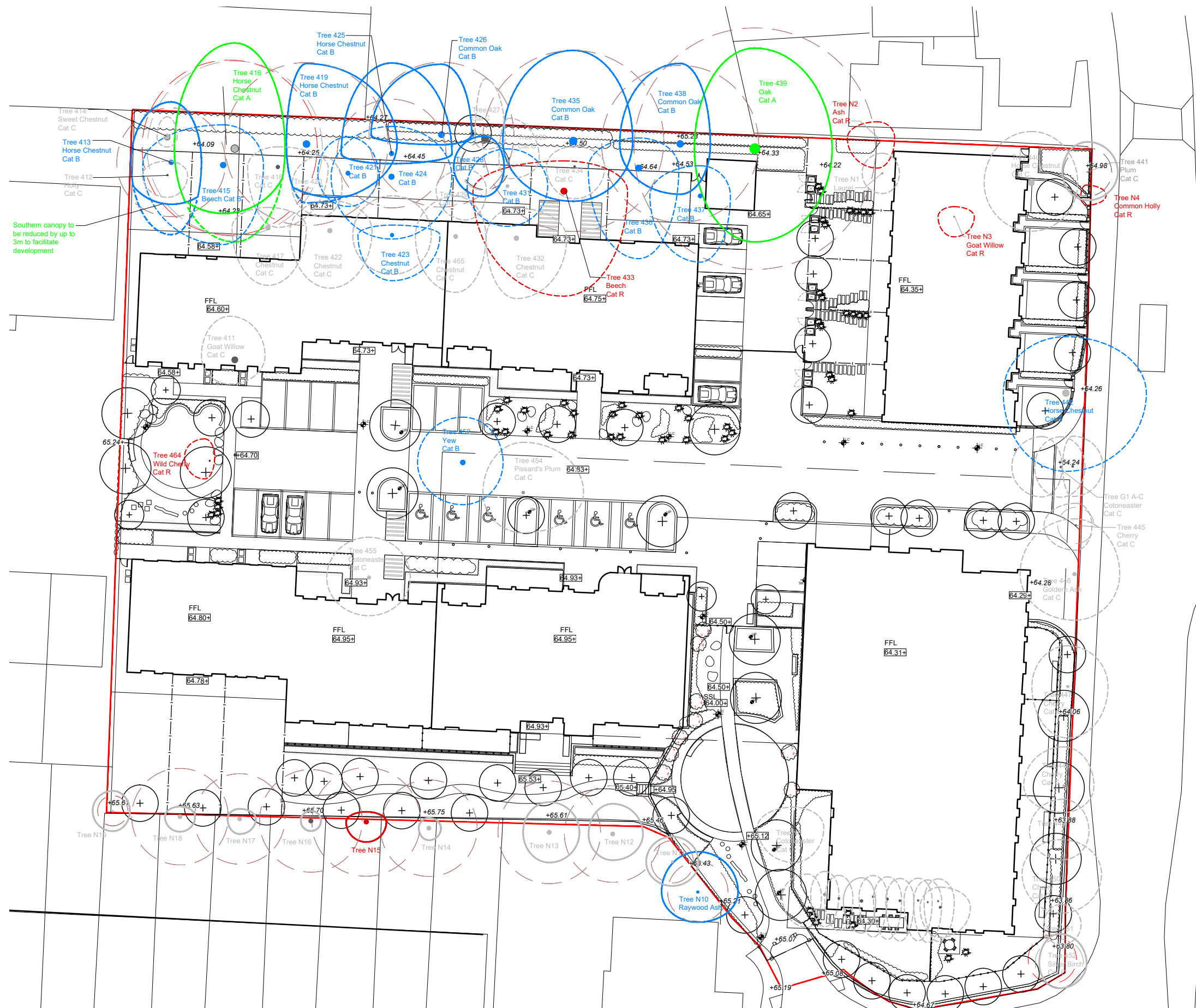
Tree strategy:

- Retain Category A trees on site, ensure they are accommodated and maintained within proposed development
- To retain existing perimeter trees where possible to realise development.
- Plant 64 new trees to mitigate the loss of the 53 trees to be removed
- To plant mature specimens where trees are removed and through the key areas of the development
- Plant a series network of trees, including garden & orchard trees, across development increasing the diversity of tree species.

The proposals for tree removals & retentions alongside the proposed tree planting strategy have been discussed with the borough tree officer to help develop our proposals. A meeting was held on site on 20th June 2016 with Alex Fraser from Haringey council attended by Ireland Albrecht and Catalyst Housing.

Existing Site Trees

Coppetts Wood Hospital Site - Landscape - Ireland Albrecht Landscape Architects- 16.09.16



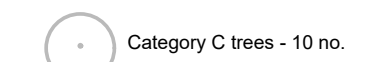
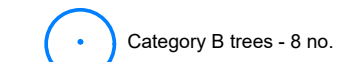
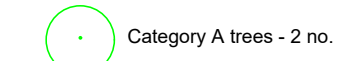
TREE PLAN KEY:



Total trees in survey area - 74no.
Total trees in site area - 64no.

EXISTING TREES TO BE RETAINED:

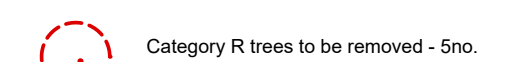
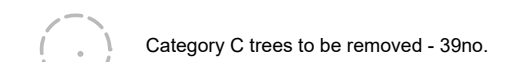
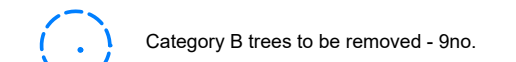
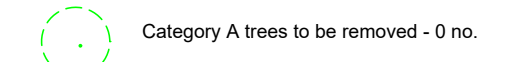
Tree Numbers coordinate with Arborhelp Tree Survey.



Category A trees - 2 no.
Category B trees - 8 no.
Category C trees - 10 no.
Category R trees - 1 no.
Total trees retained 21
Root Protection Area - Refer to Arborhelp Tree survey and report.

EXISTING TREES TO BE REMOVED:

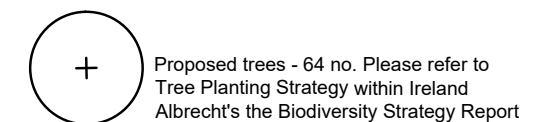
Tree Numbers coordinate with Arborhelp Tree Survey.



Category A trees to be removed - 0 no.
Category B trees to be removed - 9no.
Category C trees to be removed - 39no.
Category R trees to be removed - 5no.
Total trees removed 53
Note for clarity RPAs are not show here for removal trees. Refer to Arborhelp Tree survey and report for full Root Protection Areas.

Tree Protection:

In accordance with BS5837: 2012. See Arborhelp Tree report



Proposed trees - 64 no. Please refer to Tree Planting Strategy within Ireland Albrecht's the Biodiversity Strategy Report

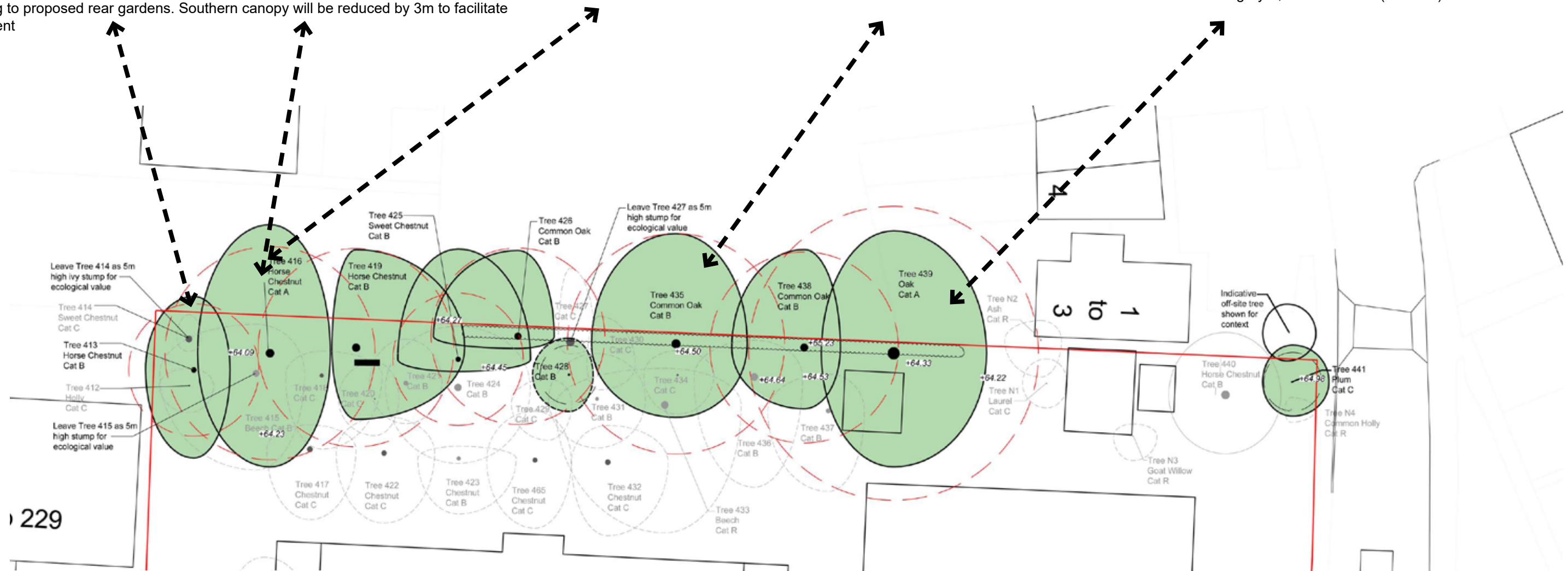
Tree Retention & Removal Strategy

Coppetts Wood Hospital Site - Landscape - Ireland Albrecht Landscape Architects- 16.09.16



Existing Horse Chestnut trees with high canopies which will ensure trees are not too dominating to proposed rear gardens. Southern canopy will be reduced by 3m to facilitate development

Category A, Common Oak (retained)



Detail of tree retention & removal plan

Existing Site Trees - Northern Boundary Trees retained

Coppetts Wood Hospital Site - Landscape - Ireland Albrecht Landscape Architects- 16.09.16



Existing trees retained

- Refer to Arboricultural survey & report

Primary Trees (45-50cm girth Ht 6-7m) (Planted at a large size to mitigate lost of large existing trees)

- Betula Pendula
- Quercus palustris
- Carpinus betulus 'Frans Fontaine'

Primary Trees (20-25cm girth)

- Quercus robur
- Prunus padus 'Albertii'
- Prunus 'Amanogawa' (Ht 5-6m)

Secondary Trees (16-18cm girth)

- Prunus sargentii
- Betula Pendula
- Amelanchier arborea 'Robin Hill'
- Amelanchier lamarckii multi-stem
- Quercus ilex

Garden Trees (12-14cm girth)

- Acer Campestre
- Crataegus monogyna
- Malus floribunda,

Orchard Trees (12-14cm girth)

- Fruiting trees TBC
- Mixed Native Hedge:

Tree Planting Strategy

Coppetts Wood Hospital Site - Landscape Proposals - Ireland Albrecht Landscape Architects- 16.09.16



Quercus palustris (shown at 45-60cm girth)

Tree Planting Strategy

An arrangement of large 6-7m high (at planting) specimen trees is proposed for the central avenue road, & to the front of block F, this will create a instant impact signifying the schemes intention of developing a high quality landscape scheme. A network of other trees has been carefully laid out across the development, creating variety & seasonality, whilst considering sustainability and site appropriateness both in scale & habit.



Betula Pendula



Carpinus betulus 'Frans Fontaine'



Amelanchier arborea 'Robin Hill'



Quercus robur (20-25cm)



Prunus sargentii



Amelanchier lamarckii (multi-stem)



Prunus padus (20-25cm)



Prunus 'Amanogawa'



Quercus ilex (evergreen Holm Oak)

Tree Strategy Species & Specification

Coppetts Wood Hospital Site - Landscape Proposals - Ireland Albrecht Landscape Architects- 16.09.16



Existing trees retained

 Refer to Arboricultural survey & report

Proposed Trees

 Trees planted at commencement of building works.
Timing to allow longer establishment & provide some immediate mitigation to the loss of existing trees.

10 no. tree (20-25cm girth)

 Trees to be planted at handover, timing in accordance to the agreed phasing of construction works.

Maintenance:

Trees planted at the start of the build works will benefit from a longer establishment where regular watering will be provided though timed irrigation system & schedule of maintenance can be provided throughout the construction phase of approximately 2 years. Following this there will be a 12 months defects liability period built into the contract for all planting, allowing for a minimum of 20 visits to include the following maintenance operations: watering, pruning & replacing any planting, grass or trees that have failed to thrive.

Trees planted in rear gardens will be able to be maintained after handover as a right of access will be maintained to gardens for maintenance visits.

Existing mature trees - a long term maintenance strategy will be produced for trees in communal and tenanted gardens, carried out Catalyst who will be taking on the estate management. The strategy will include tree works to ensure healthy future growth, & regular inspections.

Tree Planting Implementation Strategy

Coppetts Wood Hospital Site - Landscape Proposals - Ireland Albrecht Landscape Architects- 16.09.16



Example of Ivy screen

Typical Planting Species

To be robust, low maintenance likely to include the following species;

Medium Height :Density- generally @ 3no 5L plants per m2,
Low height @ 5no. 2L plants per m2

Buddleja davidii, Ceanothus spp, Choisya, Cistus, Corylus avellana, Hebe spp, Hydrangea, Lavandula, Olearia x scilloniensis, Pyracantha, Perovskia atriplicifolia, Rosa glauca, Rosa pimpinellifolia 'Double White', Rosmarinus officinalis, Rosa canina, Rosa arvensis, Sedum spectabile, Syringa vulgaris, Santolina, Spiraea x arguta, Viburnum spp

Low Height

Anemone japonica, Carex pendula, Dryopteris filix-mas, Euonymus 'Emerald Gaiety', Geranium spp, Hedera helix, Helleborus niger, Iris spp, Liriope muscari, Rosa 'Kent', Rosa 'Nozomi', groundcover, Sisyrinchium striatum 'Aunt May', Salvia, Stachys lanata (Byzantina) Thymus, Vinca minor

Climbers

Clematis vitalba, Hedera helix, Hydrangea petiolaris Jasminum officinale, Lonicera periclymenum

Hedges - Carpinus betula, Fagus sylvatica, Mixed native hedge

Soft Landscape

Key design aims:

- Maximise opportunities to enhance biodiversity, using native or wildlife beneficial species where appropriate.
- Enhancing the public realm with well placed sustainable planting areas.
- Use native hedges to create privacy for ground floor units
- Planting a network of new trees across the site

Existing Trees:

Refer to Arborhelp's Tree Report & Arboricultural Method Statement for full details relating to trees on site.

Trees removed:

53 no. trees are to be removed to facilitate development. Of these trees, 5 are category U and are recommended for removal, 39 category C and therefore of low value & 9 are category B.

Proposed new Trees:

64no proposed new trees, including: 1no. Quercus robur (Native Oak), 6 no. Quercus ilex (Holm Oak) 7no. Betula pendula (Silver birch) 7no. Quercus palustris (Oak) 4no. Carpinus betulus 'Frans Fontaine' (columnar hornbeam) 3 no. Prunus Padus (Bird Cherry), 9 no. Prunus 'Amanogawa' (Columnar flowering cherry) 7 no. Prunus sargentii (Flowering Cherry) 5 no. Amelanchier arborea, 9no Orchard Trees. For full list of trees refer to tree strategy within Biodiversity Strategy.

Planting:

A belt of native buffer planting to the north boundary is proposed around existing retained native shrubs, including Yew, Holly, Pyracantha, Privet, Dog wood. Native climbers such as Clematis vitalba & Honeysuckle will be planted against the existing retained boundary fencing. These species mixes will provide attractive dense cover for wildlife, with flowers and pollen, & winter berries.

Clipped native Hornbeam & Beech hedges are proposed as defensible planting around ground floor terraces.

Planting ares within Play Area & Pocket Green - this will have a robust but decorative character, with a high percentage of evergreens and seasonal highlights; it will comprise tall robust shrub planting to the back, mixed height flowering shrubs and herbaceous perennials to the middle & groundcovers to the front.

Green wall:

A planted wall is proposed along the ground-floor elevation of block F facing the Pocket Green. This wall extends vegetation vertically enhancing the façade of the building, creating a soft natural boundary to the Pocket Green garden.

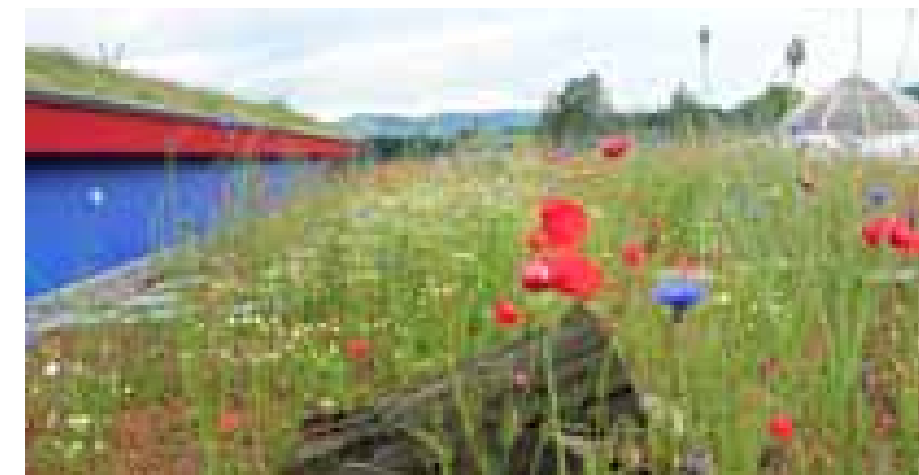
Ivy screens

1.8m high Ivy Screens are proposed as a boundary to the private garden of block F adjacent to the Pocket Green. This will provide an instant vegetated boundary, providing a more natural and appropriate boundary for the Pocket Green while providing a welcome degree of privacy for the private garden.

Greenroofs: refer to Biodiverse roof strategy within Biodiversity Strategy.



Roof plan - areas of proposed biodiverse roof



An example of log pile and wildflowers on roof setting



An example of a Biodiverse green roof & PV panels

Bio-diverse roofs

PV & Greenroof

Where Photovoltaic panels have been proposed on Blocks C, D & F, a layer of low maintenance extensive vegetation will be planted. This enables a greater portion of the roof to become a biodiverse roof. Planting surrounding PV panels can have a cooling effect reducing the chance of overheating and extending the life of the panel. The shelter and shade created by the panels attracts a broader range of wildlife.

Vegetation

The roof will be seeded with a neutral grassland land mix chosen to relate to the existing habitat of dry neutral clay grassland present at Glebelands & Coppetts Wood Nature Reserve which is within 1km of the site.

Wildlife habitat

Suitable areas roof will have small areas contoured substrate with log and stone piles to create habitat for insects and shelter for birds. Bird water dishes will be located on the roof as the site has no standing water.

Biodiverse Roof Strategy

Coppetts Wood Hospital Site - Landscape Proposals - Ireland Albrecht Landscape Architects- 16.09.16

This document is to be read in conjunction with the following reports

ASW Ecology

- Ecological Assessment
- Reptile Survey by ASW Ecology
- Breeding Bird Survey by ASW Ecology
- Bat Emergence Survey by ASW Ecology

Arborhelp

Tree survey & Schedule to BS BS583

- Arboriculture Implications Assessment
- Tree Protection strategy
- Tree Work Plan