TREE SURVEY

CONSTRAINTS ANALYSIS

ARBORICULTURAL IMPACT ASSESSMENT

Royal Cornwall Hospitals Trust

West Cornwall Hospitals Development Project

St Clare Street

Penzance

TR18 2PF

Client: Kier

Reference: EV-3871-A-TS CA AIA

Site Visit Date: 11 May 2021

Report Date: 28 May 2021

Evolve Tree Consultancy

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1 INSTRUCTION

1.1 Kier instructed Evolve Tree Consultancy to provide a:

1. Tree Survey.
2. Constraints analysis and Tree Constraints Plan.
3. Arboricultural Impact Assessment and Tree Protection Plan.

2 INTRODUCTION

2.1 The site contains a hospital facility. We have been asked to survey these trees to assess their condition with regards the potential for development.

2.2 This report analyses the final design and describes the implications of the development on the trees.

2.3 This arboricultural impact assessment report provides the necessary information to satisfy the validation requirements of a planning application by the local planning authority (LPA).

Image 1. Google map data 2021 with survey area annotated.

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3 METHODOLOGY

3.1 Tree Survey: I have undertaken both survey and report to accord with the recommendations in British Standard 5837:2012 Trees in relation to design, demolition & construction - Recommendations (BS 5837). It is not a risk assessment, nor does it assess the risks related to subsidence, heave or other forms of disturbance associated with tree root growth or removal.

3.2 My survey was a visual one made from ground level. I did not have access to trees outside the boundary of the site. Any observations of these trees are confined to what is visible from within the property.

3.3 Tree Schedule Explanatory Notes are presented as Appendix A.

3.4 Tree positions are indicated on the Tree Constraints Plan (TCP), which is based on the topographical survey provided.

3.5 Arboricultural Impact Assessment: Arboricultural impacts are a predicted change in condition as a result of an activity related to the project. The importance of an impact is a result of the relationship between the magnitude of a change (positive or negative) and the quality or sensitivity of the feature being affected.

3.6 Impacts are generally described as either none (no arboricultural effects or inconvenience), low, moderate, or high (major arboricultural effects of inconvenience). Time frames are referred to as short (0-10 years), medium (10-20 years), long (20-40 years) and very long (40+ years).

3.7 My assessment focuses on the impacts relevant to planning merits and is guided by the British Standard BS5837 'Trees in relation to design, demolition, and construction – recommendations'.

3.8 Typical considerations include:

- Tree loss.
- Build practicability.
- Mitigation planting.
- Effect on amenity value
- Removal of structures.
- Construction access.
- Statutory Protection.
- Canopy protection.
- Future conflicts
- Proximity to other structures
- Shading.
- Infrastructure
- Design conflicts
- Necessary pruning
- Use of land near trees.

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4 SUPPORTING DOCUMENTATION

4.1 Relevant documents provided to me include:

- Topographical Survey prepared by, drawing number, dated.
- Project survey with new build overlay, prepared by Stride Treglown, drawing number 154345-STL-02-ZZ-DR-A-XXXX-E1002 Revision P29 dated 26 April 2021.

4.2 This report should be read alongside Evolve drawing:

- Tree Constraints Plan EV-3871-TCP.
- Tree Protection Plan EV-3871-TPP.

5 STATUTORY PROTECTION & OTHER CONTROLS

5.1 I have used information supplied by Cornwall County Council Interactive map. If any tree is identified for removal, confirmation should be sought from the local planning authority (LPA) in writing about the protected status.

5.2 Tree Preservation Orders: None of the trees on or adjacent to the site are currently protected by a Tree Preservation Order (TPO).

5.3 Conservation Area: Part of the site is within a Conservation Area. Reference Penzance DCO182.

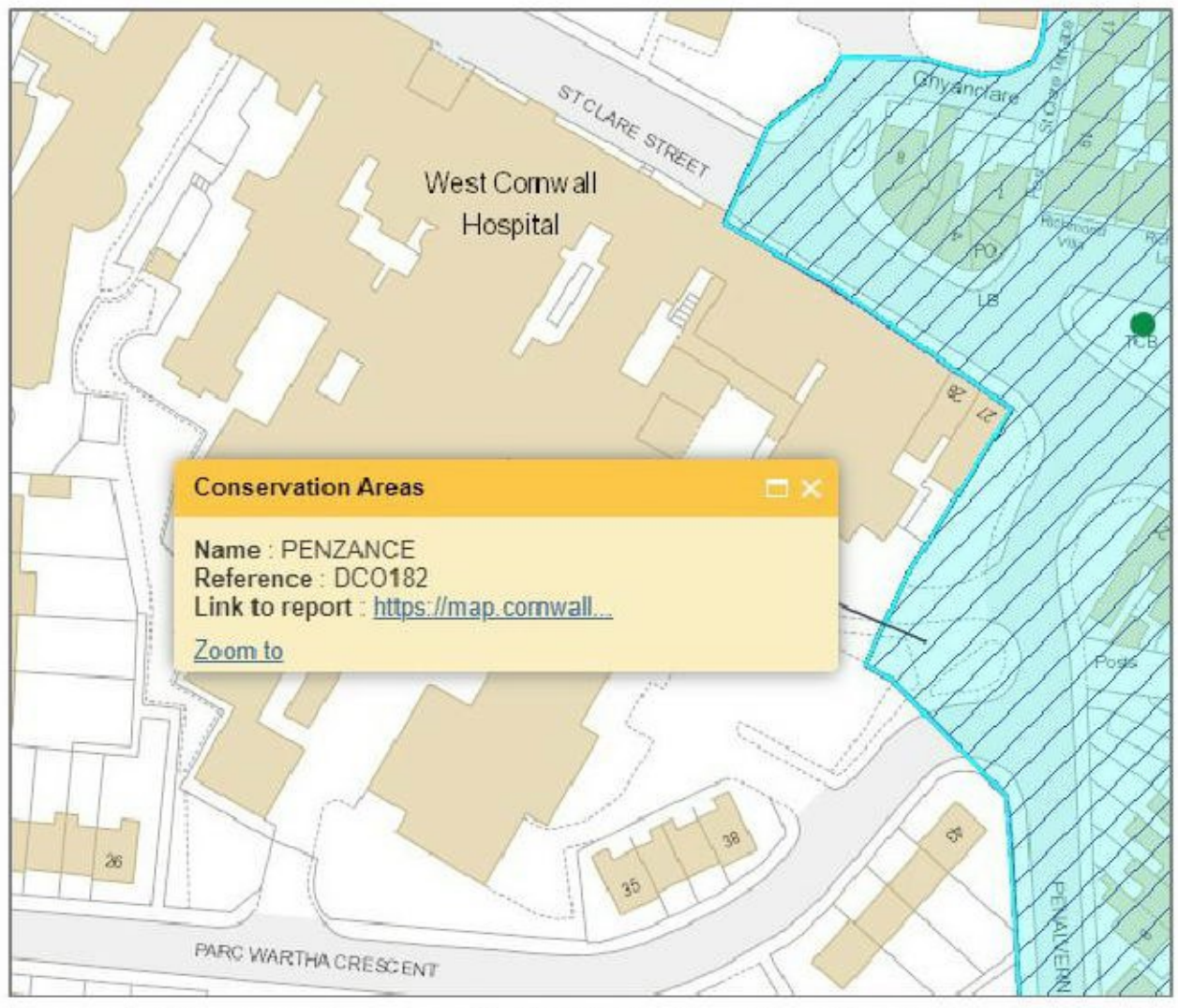

Image 2. Conservation Area is illustrated by blue highlighted hatch lines as illustrated by the Cornwall Council Interactive Map.

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5.4 Felling Licences: Felling licenses are generally required for felling living trees unless they are fruit trees, or trees growing in a garden, orchard, churchyard or designated open space.

5.5 Planning Conditions/Covenants: I did not investigate whether any planning conditions or legal covenants relevant to the trees are in place.

6 PLANNING POLICY & DESIGNATIONS

6.1 National Planning Policy Framework (NPPF): This sets out national planning policy.

Paragraph 170 states that "Planning policies and decisions should contribute to and enhance the natural and local environment by:
recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland."

Paragraph 175 states that "development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused unless there are wholly exceptional reasons and a suitable compensation strategy."

6.2 Cornwall Local Plan: This sets out local planning policy. It includes the following relevant policies:

Policy 12: Design – Development must ensure Cornwall's enduring distinctiveness and maintain and enhance its distinctive natural and historic character.
Policy 22: European Protected Sites – mitigation of recreational impacts from development.
Policy 23: Natural environment. Development proposals will need to sustain local distinctiveness and character and protect and where possible enhance Cornwall's natural environment and assets according to their international, national, and local significance.

6.3 Cornwall Council Planning for Biodiversity Guide: The guide sits below the Local Plan and provides additional information to guide decisions relying on policies 22 and 23.

Paragraph 10.7.3 states that: "Buffering for hedges suggests that for residential developments that an absolute minimum buffer of 2-metre either side of the hedge is required. For industrial and solar farm developments a

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5-metre buffer is an absolute minimum. Where woodland is present a 10-metre buffer is absolute minimum."

7 THE SITE & THE TREES

7.1 The Site: The site comprises of a hospital complex with associated parking and landscaping areas. The site is currently used for car parking and four cottages are located to the south of the survey area.

7.2 The site is currently accessed directly from Penalverne Drive.

7.3 Surrounding land is residential dwellings.

Image 3. Location plan ©Google 2020.

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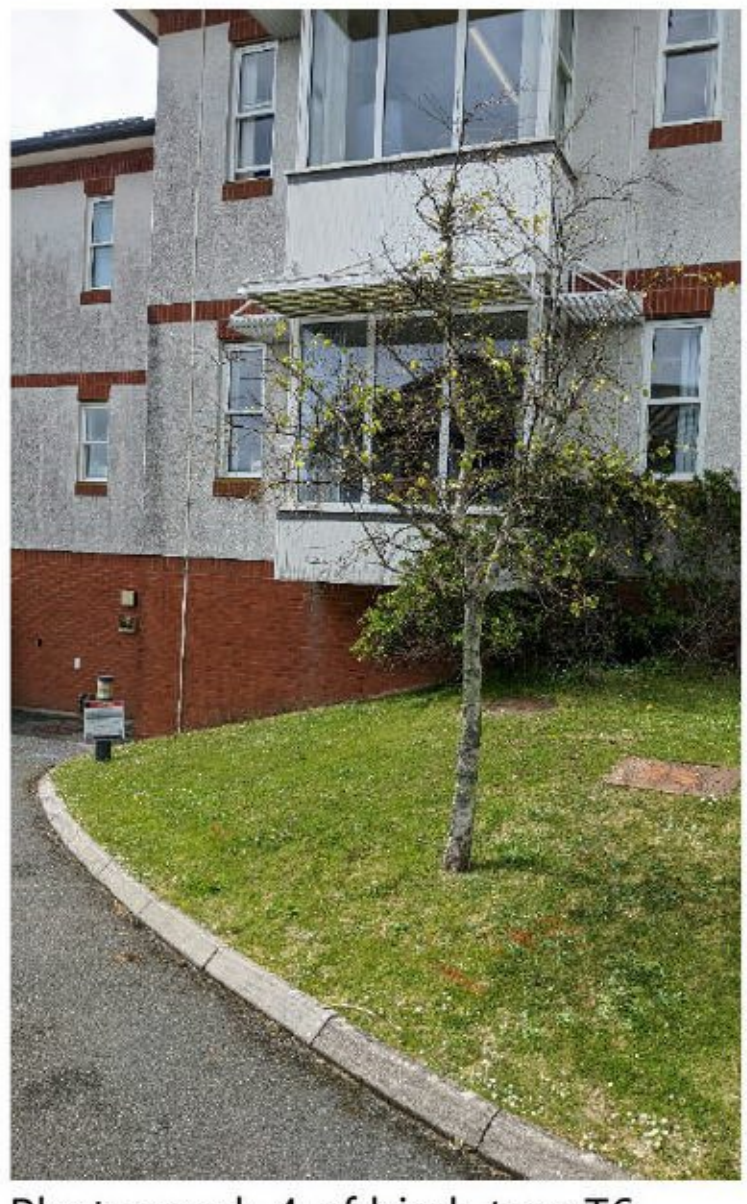
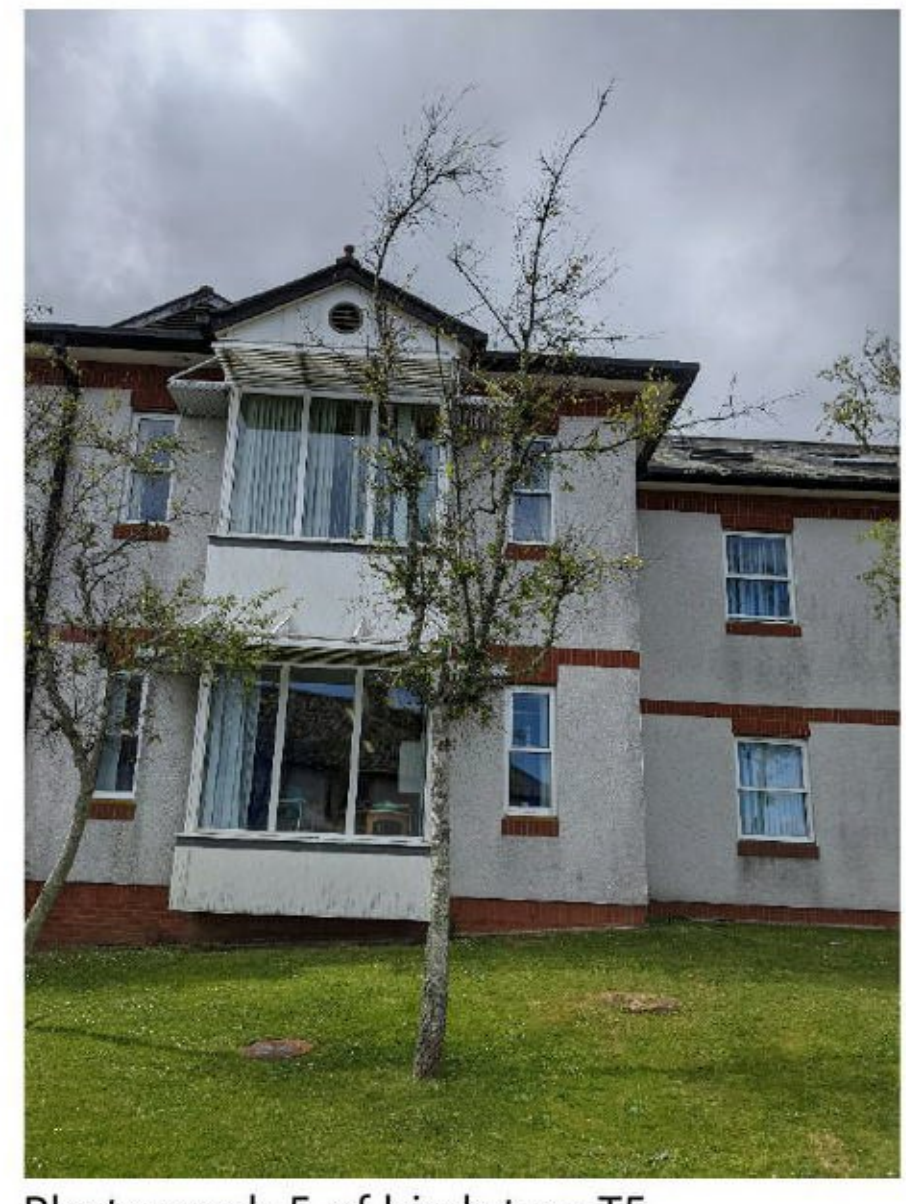
7.4 **The Trees:** The trees surveyed comprise a mix of exotic and native species planted around the hospital grounds as part of the landscaping. The cherries (G1, T7 and T8) are in good condition and provide a moderate amenity benefit to the site.

7.5 The birch trees (T2 to T6) are in poor condition with die-back visible in their crowns (photographs 4 & 5). These trees have not had the opportunity to establish effectively and have been damaged around the base by grass maintenance operations.



Photograph 4 of birch tree T6.



Photograph 5 of birch tree T5.

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7.6 The ash trees in group G9 have indications of ash die-back with major bark wounding on the stem, photograph 6 below.

Photograph 6 showing stem damage to ash tree G9.

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8 CONSTRAINTS ANALYSIS & DESIGN CONSIDERATIONS

8.1 The key constraints posed by the trees are shown on the TCP drawing. Both the above and below ground constraints have the potential to influence the design.

8.2 Tree Quality Assessment: The cascade chart, presented as part of Appendix B, is a construct of the BS5837 designed to help describe the characteristics and relative value of trees. It provides guidance enabling an estimate of which trees are important and which trees are not.

8.2.1 It does not dictate which trees ought to be retained or removed, merely the weight that should be given to them when balancing competing interests. Certain trees may be of such importance and sensitivity that they justify having a major influence on design. Others may be of little significance that could be removed without adverse impacts.

8.2.2 The key trees are identified in the survey schedule presented as Appendix B.

8.3 The root protection area (RPA): This is an area (representing a volume of soil) considered necessary to maintain the trees viability. The area represented on the TCP is a minimum recommended by BS5837 and is capped at 707 m^2.

8.3.1 The shape of the RPA will vary in accordance with site conditions e.g. a road is likely to form a barrier to root growth. Whilst the notional RPA is circular the shape plotted on the TCP may be a polygon to reflect likely barriers to root growth.

8.3.2 Encroachment within the RPA of retained trees will require justification and be supported by a sound rationale from the project arboriculturist.

8.4 Tree species: The species will influence a number of factors relevant to design including height (represented by the length of the shade arc), spread (indicated on the TCP), ultimate height and spread (which may be indicated where appropriate), deciduous/evergreen nature, crown density, seasonal nuisance etc.

8.4.1 The proximity of a tree to built houses and gardens can be a key factor affecting people's enjoyment of a property.

8.5 Age: Mature and over-mature trees are generally more sensitive to change than young trees. Their inability to adapt to altered soil conditions within or near the RPA means that care is required when designing in these places.

8.6 Shade Arc: This is an average pattern of the shade as is passes through the day. It provides an indication of how trees may impede direct sunlight.

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8.6.1 Dense shade can be addressed by the siting of dwellings and a reasonable proportion of the garden outside the shade arcs.

8.6.2 Siting buildings within the shade arc can adversely affect the availability of natural daylight to principal living rooms. The internal arrangement of buildings and fenestration design can make significant improvements to daylight availability.

8.7 Services: It is prudent to locate new service outside the RPA and crown (allowing for future growth) of retained trees. However, the impact of putting services close to trees will be determined by the sensitivity and/or quality of the trees.

9 THE PROPOSAL

9.1 The indicative proposal for the site is to demolish existing cottages and construct a hospital outpatient building with rearranged car parking and landscaping.

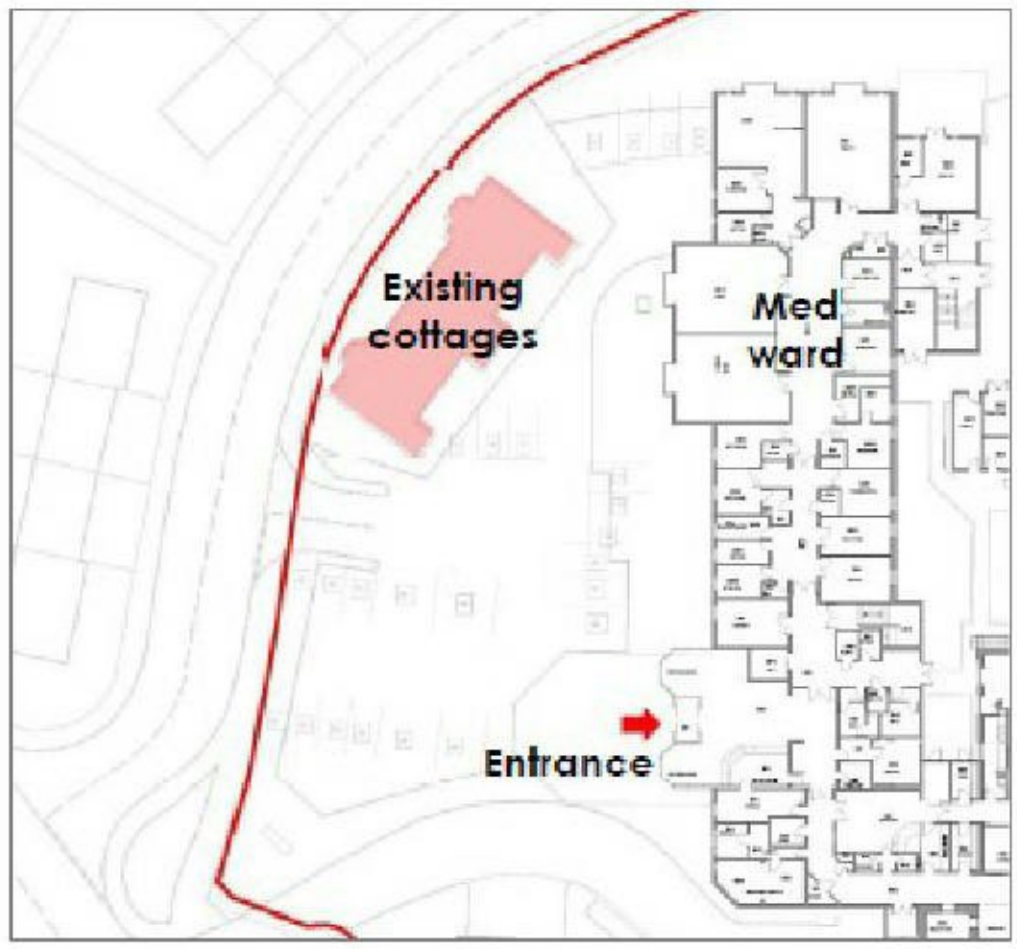

Image 4. Existing site layout.
RCHT-West Cornwall Hospitals Redevelopment Project -Project Board.
Please note that the drawing is not orientated with north at the top.

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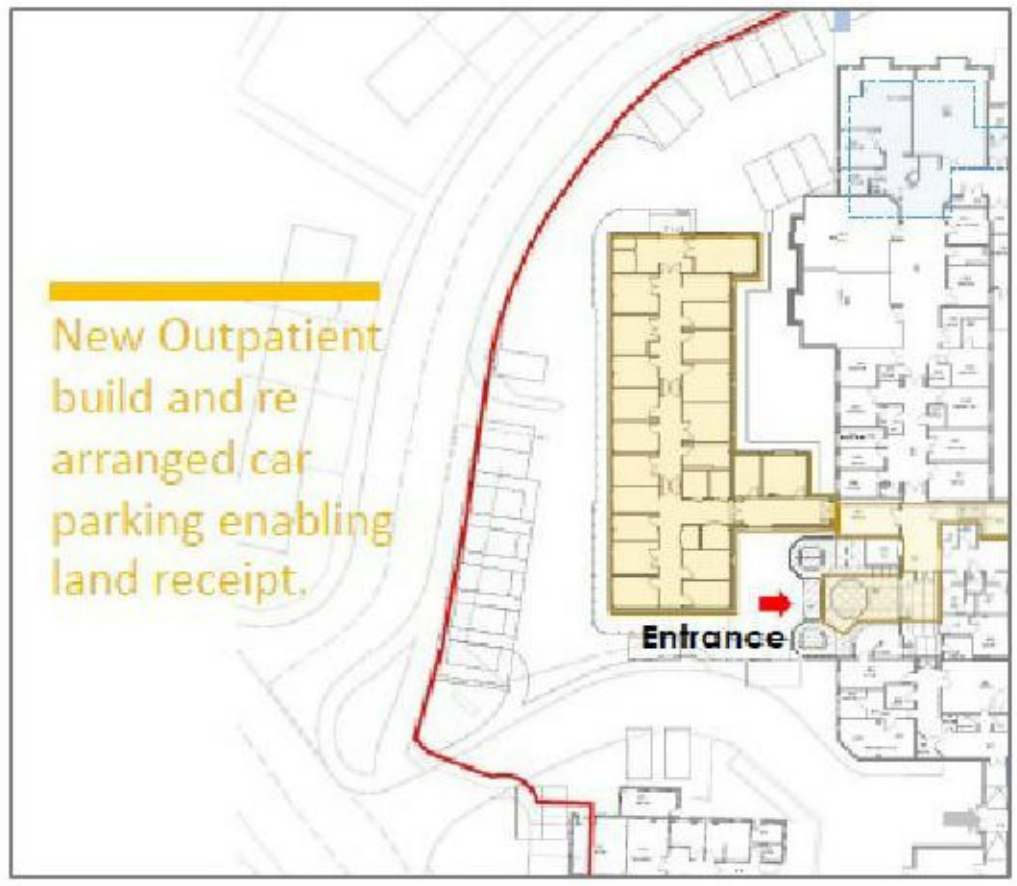

Image 5. Extract from RCHT-West Cornwall Hospitals Redevelopment Project -Project Board. Please note that the drawing is not orientated with north at the top.

10 IMPACT OF PROPOSAL ON TREES

10.1 Tree Removal & Retention: Trees to be felled are listed in Table 1. It describes why they are to be removed and the effects of doing so. The impacts of removing the tree are low.

Tree No.	Tree Species	Action	Reason	Impact
T3 to T6	Birch	Fell	Too close to new build. Poor condition	Low. Replace with new birch trees.
T7	Cherry	Fell	Too close to new build. Poor condition	Low. Replace with new tree.

Table 1. Tree removals.

10.2 Visual Amenity: The impact on the visual amenity will be low.

10.3 Sunlight/Daylight Availability (Shading): The TPP indicates the shade arcs for retained trees and demonstrates that the trees will have no effect on the enjoyment of the garden or dwelling.

10.4 Build Practicability: The root protection area (RPA) and canopy of the key trees can be protected during development by establishing a Construction Exclusion Zone (CEZ). The CEZ will be protected by way of a tree protection barrier (TPB) as indicated on the TPP.

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11 ENHANCEMENT

11.1 Replacement planting is embedded within the landscape design, as to be submitted.

12 TREE PROTECTION PROPOSALS

12.1 Based on the information provided to date, this report and TPP provide defined tree protection proposals (related to this design) which can be implemented without further specification.

12.2 The TPP defines the position of tree protection fencing which will be erected prior to the commencement of development and thereafter retained until completion. Please refer to Appendices D E F G.

13 CONCLUSIONS

13.1 The overall arboricultural impacts of the proposed development are low. Consequently, the proposal does not conflict with either local or national planning policies.

13.2 We accept that a planning condition be imposed within any future decision notice which requires the measures outlined within the Tree Protection Plan to be implemented as defined.

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[redacted]

Tim Scott-Ellis BSc Hons (For), Dip Arb (RFS), F Arbor A, MICFor, MRICS
Evolve Tree Consultancy

I am a Fellow of the Arboricultural Association, a Chartered Arboriculturist and a Chartered Surveyor. I hold an honours degree in Forestry and the Royal Forestry Society Professional Diploma in Arboriculture. I have been working as a full-time, professional arboriculturist since 1999.

The authority of this report ceases when any site conditions change or pruning or other works unspecified in the report are carried out to, or affecting, the subject tree(s). The statements made in this report do not consider the effects of extremes of climate, vandalism, or accident, whether physical, chemical or fire. Evolve Tree Consultancy cannot accept any liability about these factors, nowhere prescribed work is not carried out in a correct and professional manner in accordance with current good practice.

The recommendations within this report remain valid for the period stated for re-inspection or twelve months from the date of survey.

The limit of Evolve Tree Consultancy's indemnity over any matter arising out of this report extends only to the instructing client; Evolve Tree Consultancy cannot be held liable for any third-party claim that arises following or out of this report. This report remains the intellectual property of Evolve Tree Consultancy.

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APPENDIX A
Tree Schedule Explanatory Notes

Tree Number — Sequential Tree, Group or Woodland Reference Number.

Name — Scientific name (Common name in brackets).

Height — Recorded in metres by inclinometer in each discrete area and estimated from the measured tree. (Lwr crn ht - Lower crown height, the height of the canopy above the ground.

Stem diameter — Tree stem diameter in millimetres at 1.5 metres above adjacent ground level rounded up to nearest 50 millimetres. For multi-stemmed trees, a cumulative diameter is calculated (in accordance with BS 5837:2012 Annex C).

Branch spread — Measured in metres & taken at four cardinal points (N E S W).

1st Sig branch — 1st Sig branch: Existing height in metres above ground level (agl) of the first significant branch with direction of growth (if available).

Life stage

Y Young	Recently planted or established tree.
SM Semi-mature	Age less than one-third life completed. Established tree but one that has not reached its potential ultimate height and has significant growth potential.
EM Early-mature	One-third to two-thirds life completed. A tree reaching its ultimate potential height, whose growth rate is slowing down but will still increase in stem diameter and crown spread.
M Mature	Two thirds plus life completed. Specimen with limited potential for any significant increase in size but with a reasonable life expectancy.
LM Late-mature	Two-thirds plus life completed and declining. A tree that has passed its optimum growth rate and may require specialist management. These trees may offer significant benefits in terms of nature conservation. Referred to as Over mature in the BS.
V Veteran	A tree that shows features of biological, cultural, or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Comments — General observations e.g. collapsing, the presence of any decay and physical defect and including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat.

Life Expectancy — Estimated remaining contribution in years in terms of amenity (<10, 10+, 20+, 40+).

Physiological Condition		
	G Good	Tree that appears to be in good condition and healthy without significant defects.
	F Fair	Tree that appears to be structurally sound but due to minor defects is downgraded from good.
	P Poor	Tree which shows signs of poor health, in decline and/or with significant defects.
	D Dead	Tree which is moribund or has died.
Recommendations	Preliminary management recommendations based on the site as surveyed and for any likely pruning likely to be required should any development proceed.	
Category	A grade given in accordance with BS 5837:2012 - Tree Categories (see copy of Table 1 from BS 5837:2012 below).	
RPA-R (m)	Root Protection Area (RPA) Radius - The radius of an indicative circle of the RPA.	
RPA (m^2)	RPA Area in metres squared.	

Table 1 from BS 5837:2012 Trees in relation to design, demolition & construction – Recommendations. Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Category U **Trees unsuitable for retention** Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality. *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.*			RED
Category A **Trees to be considered for Retention** Trees of high quality with an estimated remaining life expectancy of at least 40 years.	1 Mainly arboricultural qualities Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	2 Mainly landscape qualities Trees, groups, or woodlands of particular visual importance as arboricultural and/or landscape features.	3 Mainly cultural values, including conservation Trees, groups, or woodlands of significant conservation, historical, commemorative, or othe value (e.g. veteran trees or wood-pasture). .	GREEN
Category B **Trees of moderate quality** Trees with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in category A but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	BLUE
Category C **Trees of low quality** Trees with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value	GREY

APPENDIX B

Tree Schedule

Tree No.	Name (Common & Scientific)	Ht (m) (Lwr cr ht)	Stem dia. (mm)	Branch Spread (m)				1st sig branch (m)	Life Stage	Comments	Life Exp (yrs)	Cond	Cat	RPA R m	RPA A m^2
				N	E	S	W								
G1	Prunus sp. (Ornamental cherry)	4(2)	200	2.5	2.5	2.5	2.5	2	EM	No significant visible defects. Reasonable vitality and structural condition. Moderately prominent. Crown lifted to current dimensions. Forms joint canopy. Group on grassed area between car-park and road in.	20+	Good	B2	2.4	18
T2	Betula pendula (Silver Birch)	10(2)	250	2	2	2	2	2.5	SM	Poor shape & form. Declining. Dieback in crown.	<10	Poor	C1	3	28
T3	Betula pendula (Silver Birch)	7(3)	150	1.5	1.5	1.5	1.5	3	SM	Poor shape & form. Declining. Dieback in crown.	<10	Poor	C1	1.8	10
T4	Betula pendula (Silver Birch)	7(3)	150	1.5	1.5	1.5	1.5	3	SM	Poor shape & form. Declining. Dieback in crown.	<10	Poor	C1	1.8	10
T5	Betula pendula (Silver Birch)	5(3)	150	1	1	1	1	3	SM	Poor shape & form. Declining. Dieback in crown.	<10	Poor	C1	1.8	10
T6	Betula pendula (Silver Birch)	5(3)	150	0.5	0.5	0.5	0.5	3	SM	Poor shape & form. Declining. Dieback in crown.	<10	Poor	C1	1.8	10
T7	Prunus sp. (Ornamental cherry)	4(2)	200	2.5	2.5	2.5	2.5	2	EM	No significant visible defects. Reasonable vitality and structural condition. Moderately prominent. Crown lifted to current dimensions. Forms joint canopy. Group on grassed area between car-park and road in.	20+	Good	B2	2.4	18

Tree No.	Name (Common & Scientific)	Ht (m) (Lwr cr ht)	Stem dia. (mm)	Branch Spread (m)				1st sig branch (m)	Life Stage	Comments	Life Exp (yrs)	Cond	Cat	RPA R m	RPA A m^2
				N	E	S	W								
T8	Prunus sp. (Ornamental cherry)	4(2)	250	4	4	4	4	2	EM	No significant visible defects. Reasonable vitality and structural condition. Moderately prominent. Crown lifted to current dimensions. Forms joint canopy. Group on grassed area between car-park and road in.	20+	Good	B2	3	28
G9	Fraxinus excelsior (Ash)	11(2)	350	4	4	4	4	2	EM	Ash die-back present. Major bark wounding on stem. Epicormics on stem. Squirrel damage in crown.1 large tree dominating 2 suppressed tree.	<10	Poor	C2	4.2	55

APPENDIX C
Legal Constraints

Trees outside the site/property

Landowners and managers have a duty of care not to damage trees on the neighbouring land. The common causes of damage (root damage, compaction, physical damage, and inexpert pruning) must be avoided through good planning and site management.

However, branches and roots from trees on adjacent properties that extend over boundaries can be pruned back to the boundary line without the permission of the owners. However, the branch material belongs to the tree owner and should be returned where appropriate.

Statutory wildlife obligations

The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 provides statutory protection to birds, bats and other species that inhabit trees. All wild birds are protected by law under the Wildlife & Countryside Act 1981, and it is an offence to disturb injure or kill a nesting bird intentionally or to take damage or destroy an occupied nest or egg. If nesting birds are discovered works on the trees should be deferred until the nests are abandoned. Care should be taken during any felling operation, or surgery works to trees to avoid damage or disturbance to birds during the nesting season.

Tree Preservation Orders

Advice can be found at: http://planningguidance.communities.gov.uk/blog/guidance/tree-preservation-orders/tree-preservation-orders-general/

Conservation Areas

Advice can be found at: http://planningguidance.communities.gov.uk/blog/guidance/tree- preservation-orders/protecting-trees-in-conservation-areas/

Important: Exceptions for tree work relating to planning permission and permitted development from the Planning Practice Guidance 15 April 2015 paragraph 36-083-20150415.

Under the heading "Is there an exception for tree work relating to planning permission and permitted development?", of the PPG states:

"The authority's consent is not required for carrying out work on trees subject to an Order so far as such work is necessary to implement a full planning permission. For example, the Order is overridden if a tree has to be removed to make way for a new building for which planning permission has been granted.

Conditions or information attached to the permission may clarify what work is exempt.

However, the authority's consent is required for works on trees subject to an Order if:

- development under a planning permission has not been commenced within the relevant time limit (i.e. the permission has 'expired'):
- only outline planning permission has been granted; and
- it is not necessary to carry out works on protected trees in order to implement a full planning permission."

Felling licence

In any calendar quarter*, you may fell up to 5 cubic metres on your property without a licence if no more than two cubic metres are sold. Contact your local Forestry Commission office if you are not certain whether these exemptions apply.

*1 Jan to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October 31 December

Exemptions: Certain types of felling do not need permission from the Forestry Commission. The Forestry Act 1967, as amended, and related regulations give these exceptions in full. The main categories are listed below:

Lopping and topping (which usually includes tree surgery, pruning and pollarding).

Felling included in an approved dedication plan.

Felling fruit trees, or trees growing in a garden, orchard, churchyard or designated public open space (e.g. under the Commons Act 1899).

Felling trees which, when measured at the height of 1.3 metres from the ground:

- have a diameter of 8 centimetres or less; or if thinnings have a diameter of 10 centimetres or less; or
- if coppice (i.e. managed by cutting to promote multi-stemmed growth arising at or near ground level) or underwood, have a diameter of 15 centimetres or less.

Felling trees immediately required for carrying out development authorised by planning permission (granted under the Town and Country Planning Act 1990) or for work carried out by certain providers of gas, electricity and water services and which is essential for the provision of these services.

Felling necessary for the prevention of danger or the prevention or abatement of a nuisance (e.g. which may involve the threat of danger to a third party). This exemption will only apply if there is a real rather than a perceived danger. We may be able to give you advice that would minimise the danger without felling the trees. We strongly recommend that you contact us if you are considering felling a tree or trees in these circumstances. You may be prosecuted for illegal felling if it is shown that the tree did not present a real or immediate danger.

Felling necessary to prevent the spread of a quarantine pest or disease and done in accordance with a notice served by a Forestry Commission Plant Health Officer (under the Plant Health (Forestry) (Great Britain) Order 1993, as amended.

The felling is done in compliance with any obligation imposed by or under an Act of Parliament.

More advice can be found at: http://www.forestry.gov.uk/pdf/treefellingaugust.pdf/$FILE/treefellingaugust.pdf

APPENDIX D
Tree Protection Barriers

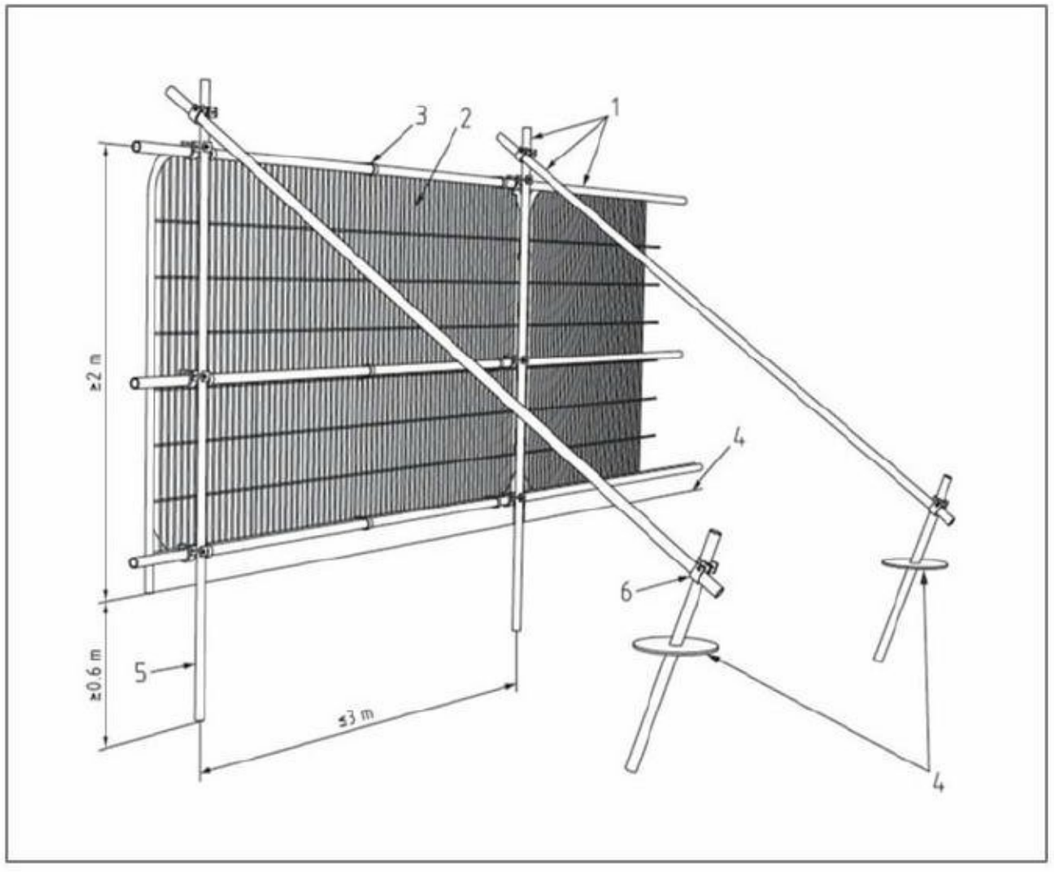
No equipment, machinery or materials shall be brought onto the site for the purposes of the development until fencing has been erected in accordance with the plans and particulars which shall have been previously approved by the local planning authority in writing.
The areas forming the Construction Exclusion Zone are to be protected by Tree Protection Barriers as per the recommendations in BS 5837:2012 (Figure 2) or as specified below at Appendix H.

This fencing is to be erected before any work commences on site and is to remain in place undamaged for the duration of all work or each phase. It will only to be removed once all work is completed and if required by planning condition, with the formal consent of the local planning authority.

If the fencing be broken or removed during the course of carrying out the development, it shall be promptly repaired or replaced to the satisfaction of the local planning authority.
Within any area fenced in accordance with this condition, nothing shall be stored, placed, or disposed of on the above or below ground, the ground level shall not be altered, no excavations shall be made, nor shall any fires be lit, without the prior written consent of the local planning authority.
Other than works detailed within this method statement or approved in writing by the local planning authority, no works at all (including storage or dumping of materials) shall take place within the exclusion zones defined by the protective fencing.
The fencing is to carry waterproof warning notices denying access within the RPA. The following signs or similar will be attached to the fence panels.

APPENDIX E
Specification for Tree Protection Barriers

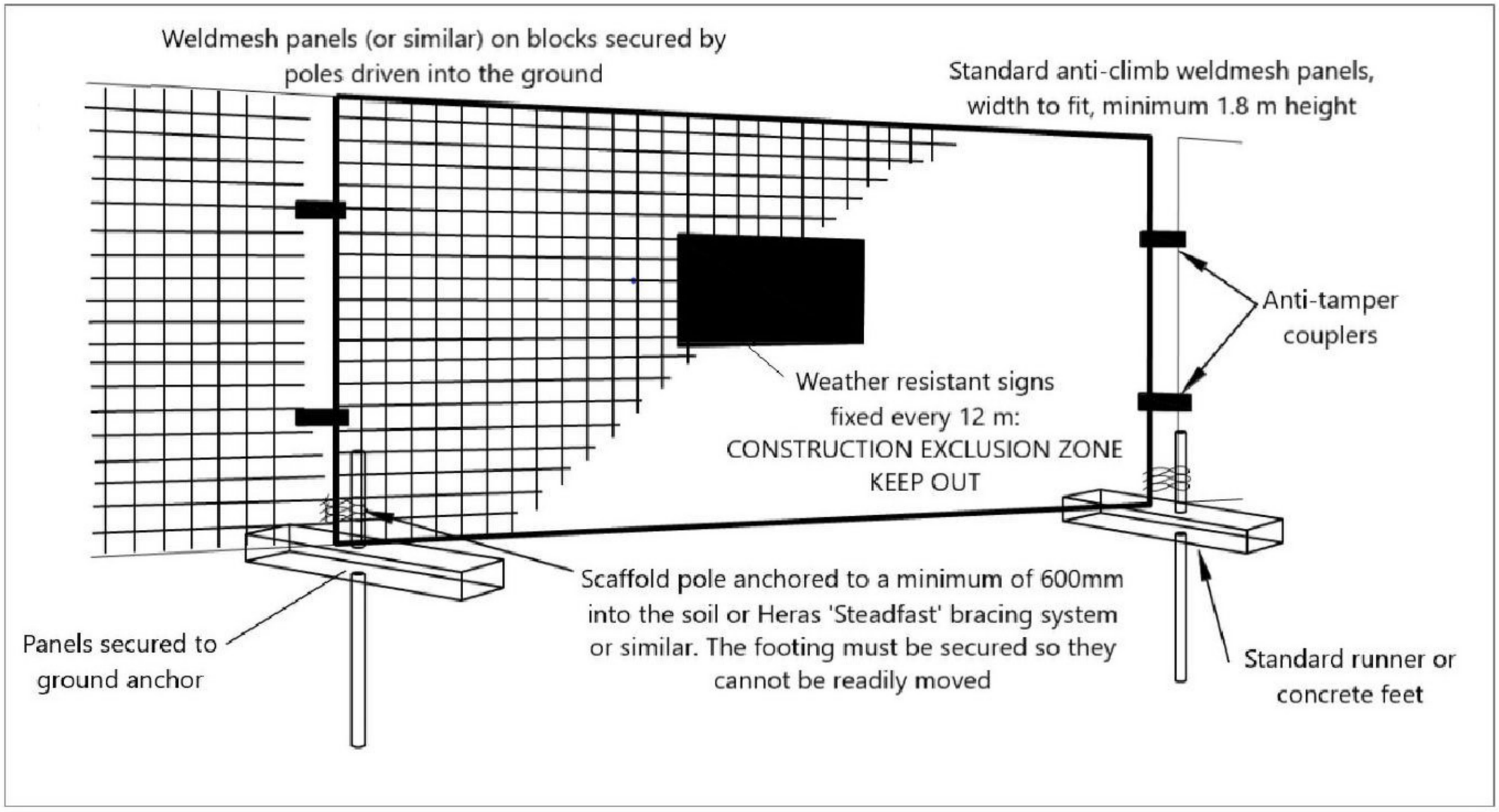
Below is the fencing specification reproduced from BS 5837:2012 Trees in relation to design, demolition, and construction – Recommendations.



Key
1 Standard scaffold poles.
2 Heavy gauge 2 m tall, galvanized tube and welded mesh infill panels.
3 Panels secured to uprights and cross-members with wire ties.
4 Ground level.
5 Uprights driven into the ground until secure (minimum depth 0.6 m).
6 Standard scaffold clamps.

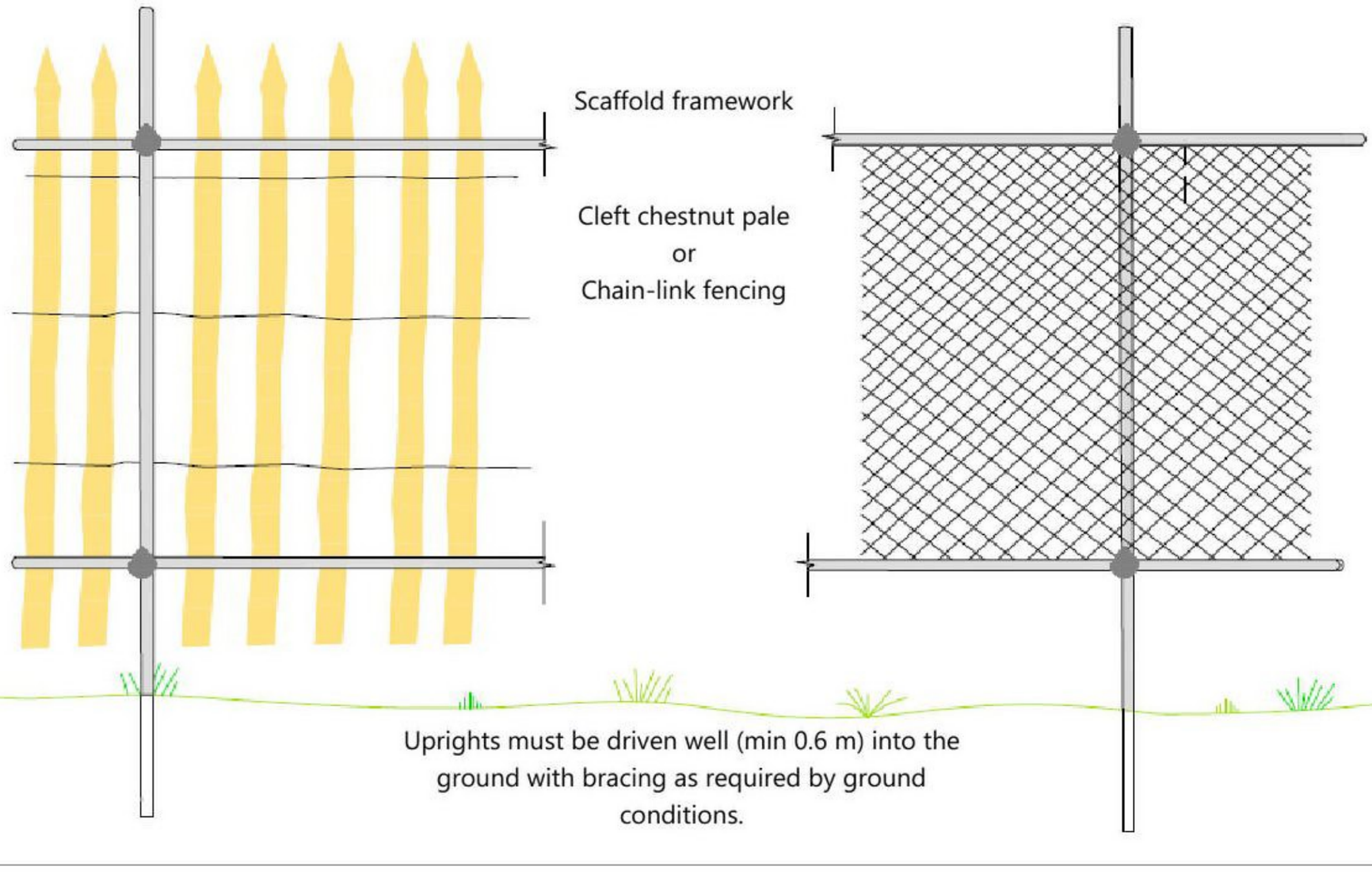
APPENDIX F
Tree Protection Barriers Medium Construction Pressure

Tree Protection Barriers (derived & amended from BS5837:2012 Figure 2) where there is insufficient space to install bracing.



APPENDIX G

Secondary Tree Protection Barriers Low Construction Pressure



APPENDIX H
Tree Protection Site Notice

Arboricultural Site Considerations – To be displayed in a prominent place.

Tree Protective Barriers must be regarded as sacrosanct and must not be removed or altered without prior consultation with either the Local Planning Authority (LPA) or the arboricultural consultant responsible for the site supervision.
Ground protection must not be lifted or removed without prior consultation with either the LPA or the arboricultural consultant responsible for the site supervision.
Damage caused to protective fencing or ground protection must be reported to the site supervisor immediately to ensure efficient repair.
No materials, chemicals, machinery, or vehicles must be stored within the Construction Exclusion Zone as defined on the Tree Protection Plan (TPP) and identified on site by fencing and above ground root protection.
No materials must be rested against a tree's trunk or machinery chained to it.
No pruning of trees may be undertaken by anyone other than an arborist, and all work must be approved by the supervising arboricultural consultant.
Any physical damage caused to a tree retained on site must be reported to the site manager so remedial work can be undertaken without delay.
Builder's sand, which contains salt, must not be used to back fill excavation within or in close proximity to tree roots, as this can have a toxic affect. Sharp sand can be used instead.
Material that will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, must not be discharged within 10 metres of a tree stem.
Fires must not be lit in a position where their flames can extend to within 5 m of foliage, branches, or trunk. This will depend on the size of the fire and wind direction.
Notice boards, telephone cables or other services must not be attached to any part of a tree.

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