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Arboricultural Impact Assessment Overview

**in Relation to Proposed 23 Unit
Residential Development at**



**Land at Old Row, Barrow,
Lancashire, BB7 9AZ**

Prepared by:

Bowland 
free **Consultancy** Ltd

February 2016

ARBORICULTURAL IMPACT ASSESSMENT OVERVIEW LAND AT OLD ROW, BARROW

CONTENTS

1. TREE SURVEY SCHEDULE & BS5837:2012 TABLE 1
2. TEMPORARY PROTECTIVE FENCING SPECIFICATION
3. TREE CONSTRAINTS PLAN
4. PROPOSED SITE LAYOUT PLAN

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TREE SURVEY SCHEDULE FOR ARBORICULTURAL IMPACT APPRAISAL

Site: Land at Old Row, Barrow, Lancashire, BB7 9AZ
Client: Caldecote Consultants

Surveyor: Kendall Rigg HMD Teeside
Survey Date: 18 January 2016
Job Ref.: BTC1037

Page: 1 of 4

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearance	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
T1	Common Oak	14	900#	N 7.5 E 9.5 S 9 W 8.5	4 1.5	M	G	- Located on neighbouring land therefore not inspected in detail. - Immediately next to boundary fence with crown partially encroaching over site. - Moderate amount of deadwood to approximately 70mm diameter.	Ensure protection of Root Protection Area (RPA) with temporary protective fencing (specification appended) throughout course of development.	40+	A1/2	366	10.8
T2	Ash	14.5	650#	N 8 E 9 S 8 W 6	5 1.5	M	M/P	- Located on neighbouring land therefore not inspected in detail. - Immediately next to boundary fence with crown partially encroaching over site. - Has evidently sustained several previous branch failures of up to approximately 250mm diameter. - Crown showing signs of a substantial reduction in vitality with small leaves and moderately sparse foliage cover. - Moderate amount of deadwood to approximately 80mm.	Ensure protection of RPA with temporary protective fencing throughout course of development.	10+	C1/2	191	7.8
T3	Common Oak	11	590#	N 6 E 9 S 6 W 0	4-N 1	EM	G	- Located on neighbouring land therefore not inspected in detail. - Immediately next to boundary fence with crown partially encroaching over site. - Highly biased crown to east with stem having a point of severe curvature at a height of approximately 3m, after which it extends horizontally.	Ensure protection of RPA with temporary protective fencing throughout course of development.	10+	C1	157	7.08
T4	Ash	16	750#	N 8.5 E 8.5 S 8.5 W 8.5	5 1	M	P	- Located on neighbouring land therefore not inspected in detail. - Immediately next to boundary fence with crown partially encroaching over site. - Extensive swelling to stem base. - Crown showing signs of a substantial reduction in vitality with small leaves, moderately sparse foliage cover and widespread adventitious growth to branches. - Has evidently sustained several previous branch failures of up to approximately 200mm diameter. - Large space in north side of crown, evidently resultant of dieback and branch failure. - Short remaining life expectancy of less than 10 years.	- Inform land owner (likely to be Council) of tree's poor structural and physiological condition and evident short projected remaining safe life expectancy. - If tree is retained then ensure protection of RPA with temporary protective fencing throughout course of development.	<10	U	254	9

Headlines and Abbreviations

No. Allocated sequential reference number - Tree (T), Group (G), Woodland (W) or Hedge (H) where tree number - refer to plan and to numbered tags where applicable
Common name
Species: In metres, to nearest half metre - where possible approximately 80% are measured using an electronic clinometer and the remainder estimated against the measured trees. In the case of Groups and Woodlands the measurement taken is that of the highest tree
Height: Stem diameter in millimetres, to nearest 5mm - measured and calculated as per Annex C of BS5837:2012. MS = multi-stemmed, TS = well-stemmed
Branch Spread: Crown radius measured (or estimated where considered appropriate) from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown
Branch & Canopy Clearance: Existing height above ground level, in metres, of first significant branch and direction of growth (e.g. 2.5N) and of canopy at lowest point - to inform on crown to height ratio, potential for shading, etc.
Life Stage: Estimated age class - Y = young, SM = semi-mature, M = mature, PM = post-mature
PC: Physiological Condition - a measure of the tree's overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc.
General Observations and Comments: Comments relating to the tree's overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc.
Management Recommendations: Surveys take the proposed development into consideration with recommendations made accordingly. More than one option may be given if considered appropriate
ERC: Estimated Remaining Contribution - In years as per BS5837:2012 (i.e. <10, 10+, 20+, 40+)
Cat. Grade: Category Grading - free retention value listed as U, A, B or C - in accordance with BS5837:2012 Table 1
RPA m²: Root Protection Area in m² - calculated area around the tree that must be appropriately protected throughout the development process in order to avoid root damage
RPA Radius (m): Root Protection Area Radius - in metres measured from the centre of the stem to the line of tree protection
(Estimated Dimensions): Where trees are located off-site, or are inaccessible for any other reason, and accurate measurements or other information cannot be taken then the information provided is estimated and is duly suffixed with a '#' symbol

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Page: 2 of 4

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T5	Common Oak	11.5	600#	N 7 E 7 S 5 W 5	3 2	M	M/P	- Located on neighbouring land therefore not inspected in detail. - Immediately next to boundary fence with crown partially encroaching over site. - Crown showing signs of a substantial reduction in vitality.	Ensure protection of RPA with temporary protective fencing throughout course of development.	20+	B1/2	163	7.2
T6	Hawthorn	5	1x300 N 1x250 E 1x150 S (ms) W 4	6.5 1 3 4	2-N 1	PM	MD	- Located on neighbouring land therefore not inspected in detail. - Close to boundary fence with crown partially encroaching over site. - Stem trifurcates at a height of between approximately 0.2m and 1m. - Highly biased crown to north-west due to suppression by neighbouring tree(s). - Crown showing signs of a significant reduction in vitality with very small leaves and very sparse foliage cover. - In early to mid stages of decline.	- Inform land owner (likely to be Council) of tree's poor physiological condition and evident short projected remaining life expectancy. - If tree is retained then ensure protection of RPA with temporary protective fencing throughout course of development.	<10	U	79	5.02
T7	Hawthorn	7	1x230 N 1x160 E (ts) S W 2.5	2.5 2.5 2.5 2.5	2 0	EM	M/G	Two stems arise at ground level.	Remove in order to implement development as proposed.	10+	C1/2	35	3.36
T8	Goat Willow	10.5	≤ 6x250 S (ms) W 6	7 6.5 6 6	1 0.5	PM	G	- Stem approximately 0.1m from low roof of outbuilding. - Stem divides into multiple primary branches at a height of approximately 1m with very tight forks and included bark unions at point where evidently previously topped.	Remove in order to implement development as proposed.	10+	C1	170	7.35
T9	Ash	9	1x220 N 1x130 E (ts) S W 3.5	4 4 3.5 3.5	2 2	SM	G	- Smaller diameter sub-stem arises at ground level with an acute included bark union. - Stem approximately 0.1m from boundary fence.	Remove in order to implement development as proposed.	10+	C1	30	3.07
T10	Bird Cherry	4	5x50 E (ms) S W 2	2 2 2 2	0.2 1	Y	G	Stem divides into multiple primary branches at a height of approximately 0.3m with tight forks.	Remove in order to implement development as proposed.	40+	C1	6	1.34
T11	Hawthorn	6	≤ 100 N (ms) E S W 3.5	3.5 3.5 3.5 3.5	1.5 1	PM	MD	- Stem divides into multiple primary branches at a height of approximately 1m with tight forks. - Crown showing signs of a significant reduction in vitality with very small leaves and very sparse foliage cover. - In mid stages of decline with short projected remaining life expectancy.	Remove due to short projected remaining life expectancy.	<10	U	27	2.94

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No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearance	Life Stage	PC	General Observation and Comments	Management Recommendations	ERC	Cat. Grade	RPA Radius (m)	RPA (m ²)
T12	Golden Lawson Cypress	4	100	N 1 E 1 S 1 W 1	0.2 0	Y	G	No visible structural defects.	Remove in order to implement development as proposed.	40+	C1	5	1.2
T13	Bird Cherry	6	80	N 2.5 E 2.5 S 2.5 W 2.5	0.5 0.5	SM	G	Stem divides into multiple sub-stems at a height of approximately 0.4m with very tight forks.	Remove in order to implement development as proposed.	20+	C1/2	17	2.35
T14	Hawthorn	5.5	100	N 2.5 E 2.5 S 2.5 W 2.5	0.5 1	M	M	- Located within area that forms public footpath and therefore under third-party ownership. - Stem divides into multiple primary branches at a height of approximately 1m. - Crown showing signs of a moderate reduction in vitality with moderately small leaves and slightly sparse foliage cover.	Remove in order to implement development as proposed.	10+	C1	27	2.94
G1	2no. Hawthorn	≤ 7	≤ 2x200 (ts)#	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	≥ 0.5 ≥ 0	M	M	- Located on neighbouring land immediately next to boundary fence. - Nct inspected in detail.	Ensure protection of RPA with temporary protective fencing throughout course of development.	20+	B1/2	≤ 36	≤ 3.39
G2	2no. Hawthorn	≤ 7	≤ 6x120 (ms)#	N ≤ 3.5 E ≤ 3.5 S ≤ 3.5 W ≤ 3.5	≥ 2 ≥ 1	PM	P	- Located on neighbouring evidently Council owned land immediately next to boundary fence. - Not inspected in detail. - Both are multi-stemmed and both crowns showing signs of a substantial reduction in vitality with small leaves and moderately sparse foliage cover.	- Inform land owner (likely to be Council) of trees' poor physiological condition and evident short projected remaining life expectancies. - If trees are retained then ensure protection of RPAs with temporary protective fencing throughout course of development.	<10	U	≤ 39	≤ 3.53
G3	Hawthorn, Elder, Goat Willow	≤ 9	≤ 4x200 (ms)	N ≤ 5 E ≤ 5 S ≤ 5 W ≤ 5	≥ 0.5 ≥ 0	SM- PM	P-M	- Moderately closely spaced group made up mostly of mature to post-mature Hawthorn with small number of young Goat Willow and post-mature Elder. - All are multi-stemmed. - Number of trees are in decline.	Remove in order to implement development as proposed.	10+	C2	≤ 72	≤ 4.8
G4	2no. Leyland Cypress	≤ 7	≤ 2x180 (ts)	N ≤ 2.5 E ≤ 2.5 S ≤ 2.5 W ≤ 2.5	≥ 1 ≥ 0	SM	G	- Closely spaced group. - Tree to north evidently outside site boundaries. - Both evidently previously topped at a height of approximately 2m. - Both have minor foliar chlorosis.	Remove in order to implement development as proposed.	10+	C2	≤ 29	≤ 3.05

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G5	approx. 9no. Hawthorn	≤ 6	≤ 2x200 1x100 (ms)	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	≥ 0.5 ≥ 1	EM- PM	D-P	- Loose group located within area that forms public footpath and therefore possibly under third-party ownership. - All are multi-stemmed. - Several trees in group are dead. - Remaining trees' crowns are showing signs of a substantial reduction in vitality with small leaves and moderately sparse foliage cover. - In varying stages of decline with short projected remaining life expectancies.	- Inform land owner (likely to be Council) of trees' poor physiological condition and evident short projected remaining life expectancies. - If trees are retained then ensure protection of RPAs with temporary protective fencing throughout course of development.	<10	U	≤ 41	≤ 3.6

BS5837:2012 Table 1 – Cascade Chart for Tree Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Tree unsuitable for retention (see Note)				
Category U 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, irreparable, 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 <i>Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see BS5837:2012 paragraph 4.5.7.</i>			Red
Trees to be considered for retention	1. Mainly arboricultural qualities	2. Mainly landscape qualities	3. Mainly cultural values, including conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	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)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	Green
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution. A minimum of 20 years is suggested.	Trees that might be included in the high category, but are downgraded because of impaired condition. Examples include the presence of remediable defects including unsympathetic past management and minor storm damage	Trees present in numbers, usually as groups or woodlands, so they form distinct landscape features which attract a higher collective rating than they might as individuals. But which are not, individually, essential components of formal or semi-formal arboricultural features. For example, trees of moderate quality within an avenue that includes better, A category specimens. Or trees which are internal to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	Blue
Category C Those trees of low quality and value: currently in adequate condition to remain until new planting could be established - a minimum of 10 years is suggested - or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	Grey
Note – Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation				

DISCLAIMER

Survey Limitations: Unless otherwise stated all trees are surveyed from ground level using non-invasive techniques. The disclosure of hidden crown and stem defects, in particular where they may be above a reachable height or where trees are ivy clad or in areas of ground vegetation, cannot therefore be expected. All obvious defects, however, are reported. Detailed tree safety appraisals are only carried out under specific written instructions. Comments upon evident tree safety relate to the condition of said tree at the time of the survey only.

Unless otherwise stated all trees should be re-inspected annually in order to appraise their on-going mechanical integrity and physiological condition. It should, however, be recognised that tree condition is subject to change, for example due to the effects of disease, decay, high winds, development works, etc. Changes in land use or site conditions (e.g. development that increases access frequency) and the occurrence of severe weather incidents are also significant considerations with regards tree structural integrity and trees should therefore be re-assessed in the context of such changes and/or incidents and inspected at intervals relative to identified and varying site conditions and associated risks.

Where trees are located wholly or partially on neighbouring private third-party land then said land is not accessed and our inspection is therefore restricted to what can reasonably be seen from within the site. Stem diameters of trees located on such land are estimated. Any subsequent comments and judgments made in respect of such trees are based on these restrictions and are our preliminary opinion only. Recommendations for works to neighbouring third-party trees are only made where a potentially unacceptable risk to persons and/or property has been identified during our survey. Where significant structural defects of third-party trees are identified and associated management works are considered essential to negate any risk of harm and/or damage then we will first attempt to inform the site occupier of the issues and, if not possible, then inform the relevant Council. Where a more detailed assessment is considered necessary then appropriate recommendations are set out in the Tree Survey Schedule.

Where tree stem locations are not included on the plan(s) provided then they are plotted at the time of the survey using, where appropriate and/or practicable, a combination of measurement triangulation and GPS co-ordination. Where this is not possible then locations are estimated. Restrictions in these respects are detailed in the report.

The tree survey and any report information provided is intended as a guide to identify key tree related constraints to site development only. As such, the potential influence of trees upon existing or proposed buildings or other structures resulting from the effects of their roots abstracting water from shrinkable load-bearing soils is not considered herein. The tree survey information in its current form should not therefore be considered sufficient to determine appropriate foundation depths for new buildings. Accordingly, an updated survey, with reference to the current NHBC Standards Chapter 4.2 - Building Near Trees, must therefore be prepared for the specific purpose of informing suitable foundation depths subsequent to planning approval being granted. The advice of a structural engineer must also be sought with regard to appropriate foundation depths for new buildings.

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- TEMPORARY PROTECTIVE FENCING SPECIFICATION -

Construction Exclusion Zones (CEZs), enclosed by **Temporary Protective Fencing**, as detailed below and to be agreed with the Local Planning Authority (LPA), shall:

1. be retained in place throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2012 Figure 2 (overleaf);
 2. be sited in the area defined on the Tree Protection Plan (TPP);
 3. be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
 4. preclude any delivery of site accommodation and/or materials and/or plant machinery;
 5. preclude all construction related activity, with the sole exception of specified arboricultural works and any other works to be carried out under supervision that have been agreed by all parties; and
 6. preclude the storage of all development related materials and substances including fuels, oils, additives, cement and/or any other deleterious substance.
- Any incursion into CEZs must be by prior arrangement, following consultation with the LPA.

Temporary Protective Fencing Construction

1. Temporary protective fencing panels shall be weldmesh "Heras" panels of at least 2.0 metres in height.
2. The panels shall butt together and be securely fixed to a scaffold framework, as per 3 to 5 below.
3. The scaffold framework shall comprise of upright poles of at least 3.0 metres in length driven no less than 0.6 metres into the ground at maximum 3.0 metre centres with horizontal and diagonal poles fixed to the uprights, as per 4 to 5 below.
4. The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 metres with 3 no. clamps to each joint.
5. The diagonal scaffold pole struts be clamped to the top rail of the scaffold framework at a 45° angle and extend back into the CEZ and clamped to a 0.7 metre length of scaffold tube that shall be driven no less than 0.5m into the ground.
6. No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts.
7. A 600mm x 300mm warning sign reading "TREE PROTECTION AREA KEEP OUT" (see Figure 1, below) shall be fixed to every 10.0 metre length of protective fencing.
8. On completion and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the Consulting Arboriculturist shall inspect the Temporary Protective Fencing.

Figure 1: CEZ Warning Sign

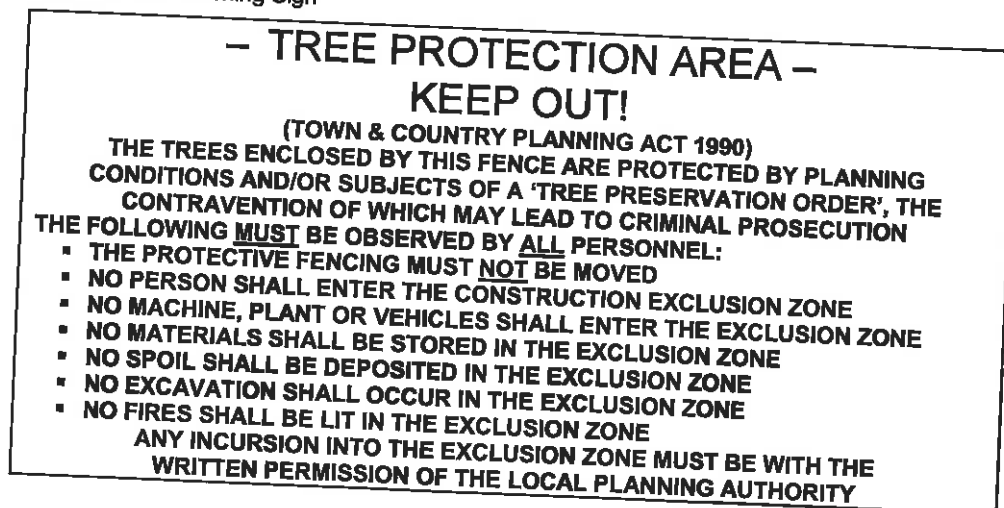


Figure 2: BS5837:2012 Default specification for protective barrier

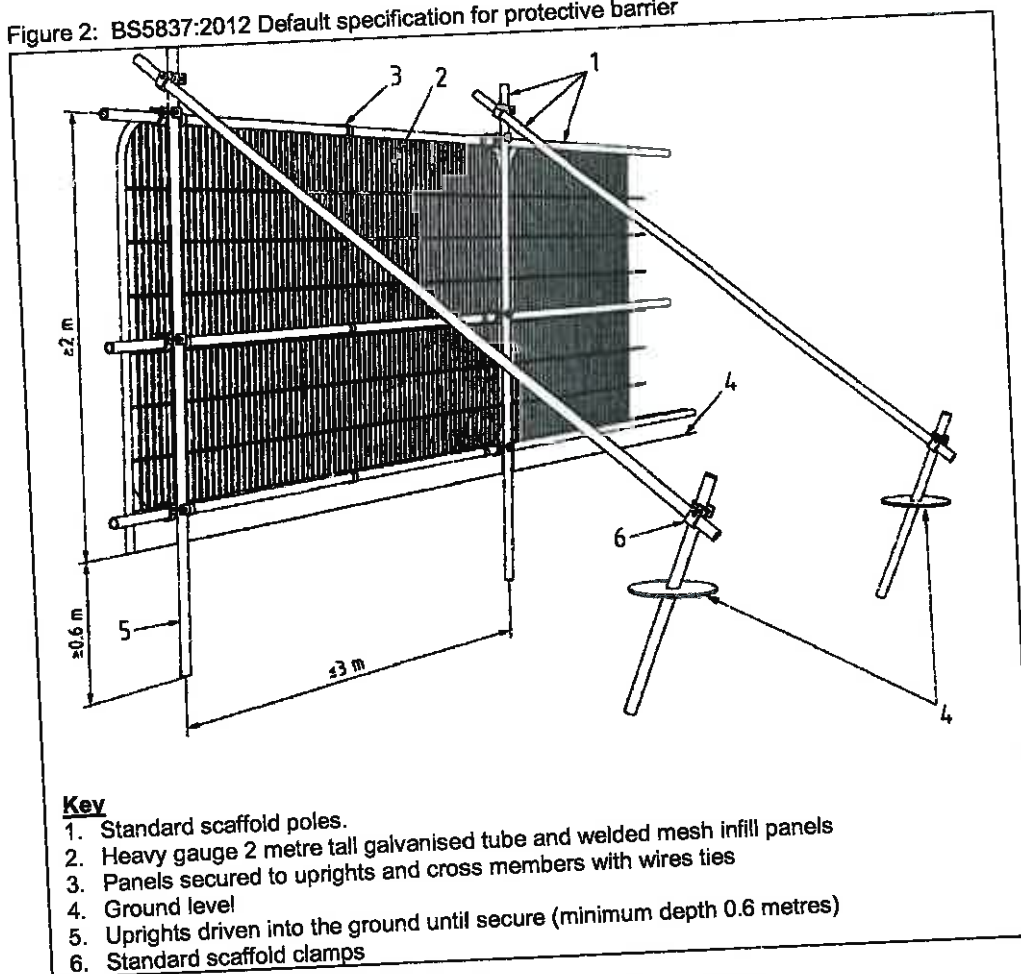
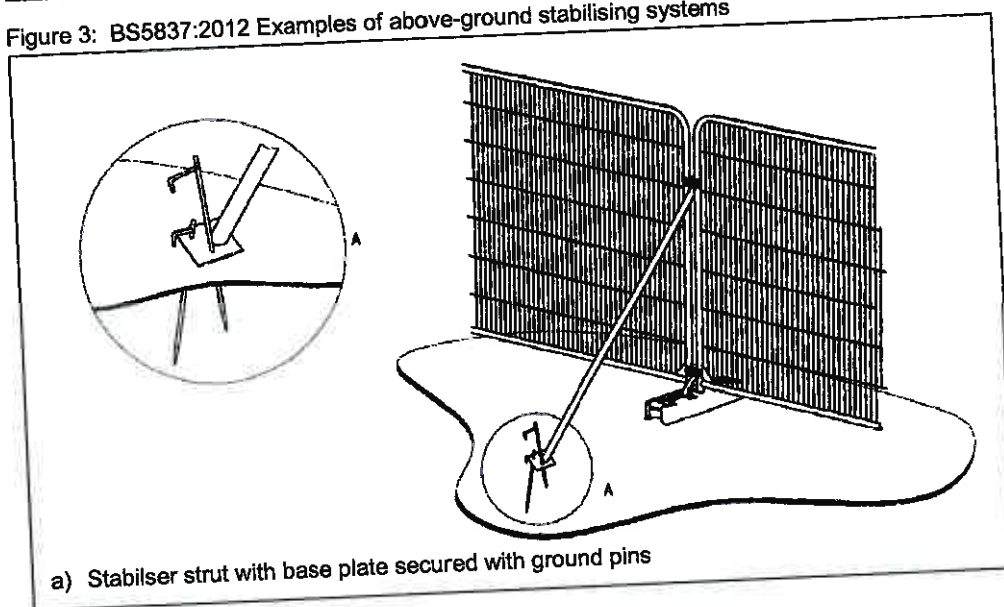
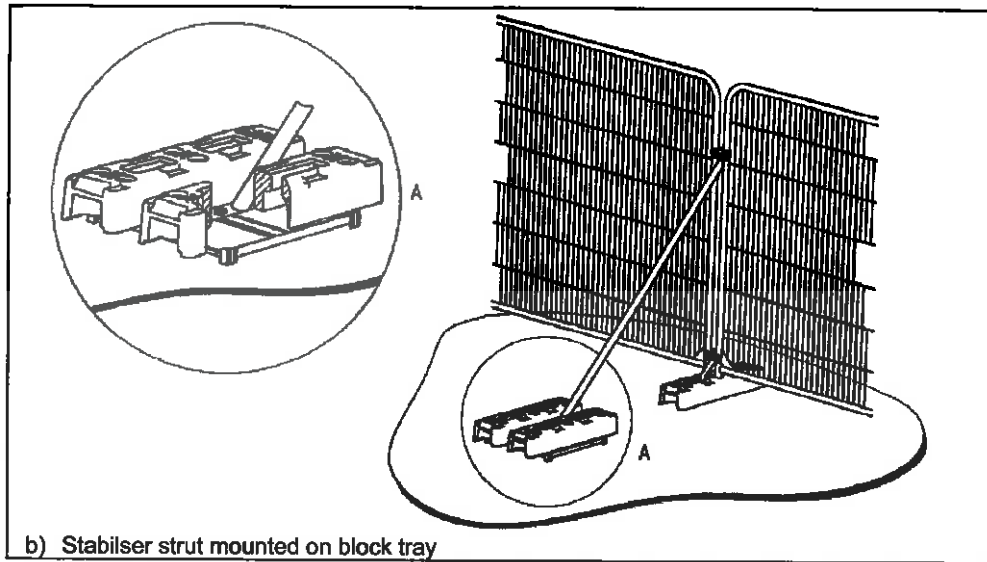


Figure 3: BS5837:2012 Examples of above-ground stabilising systems

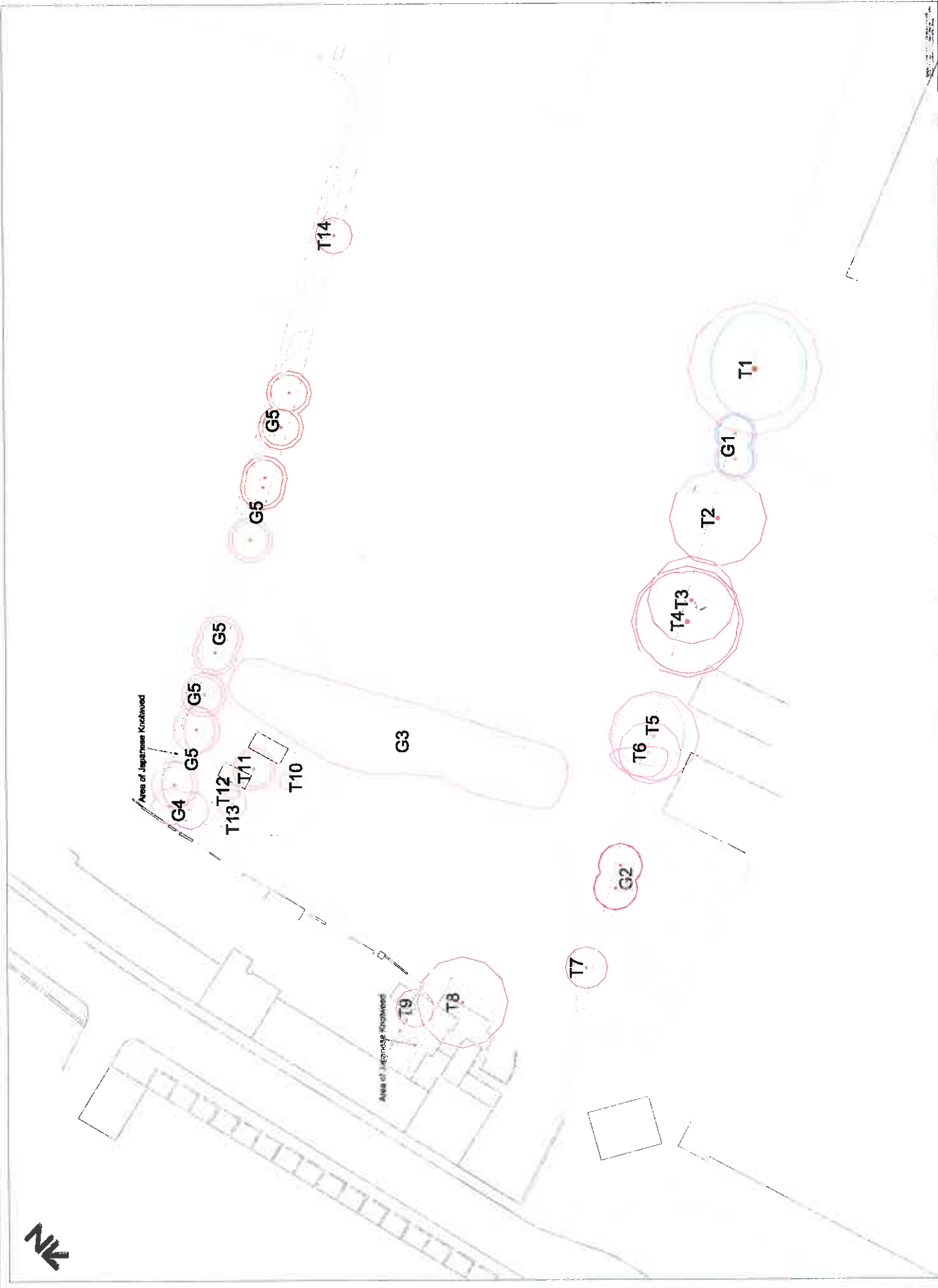


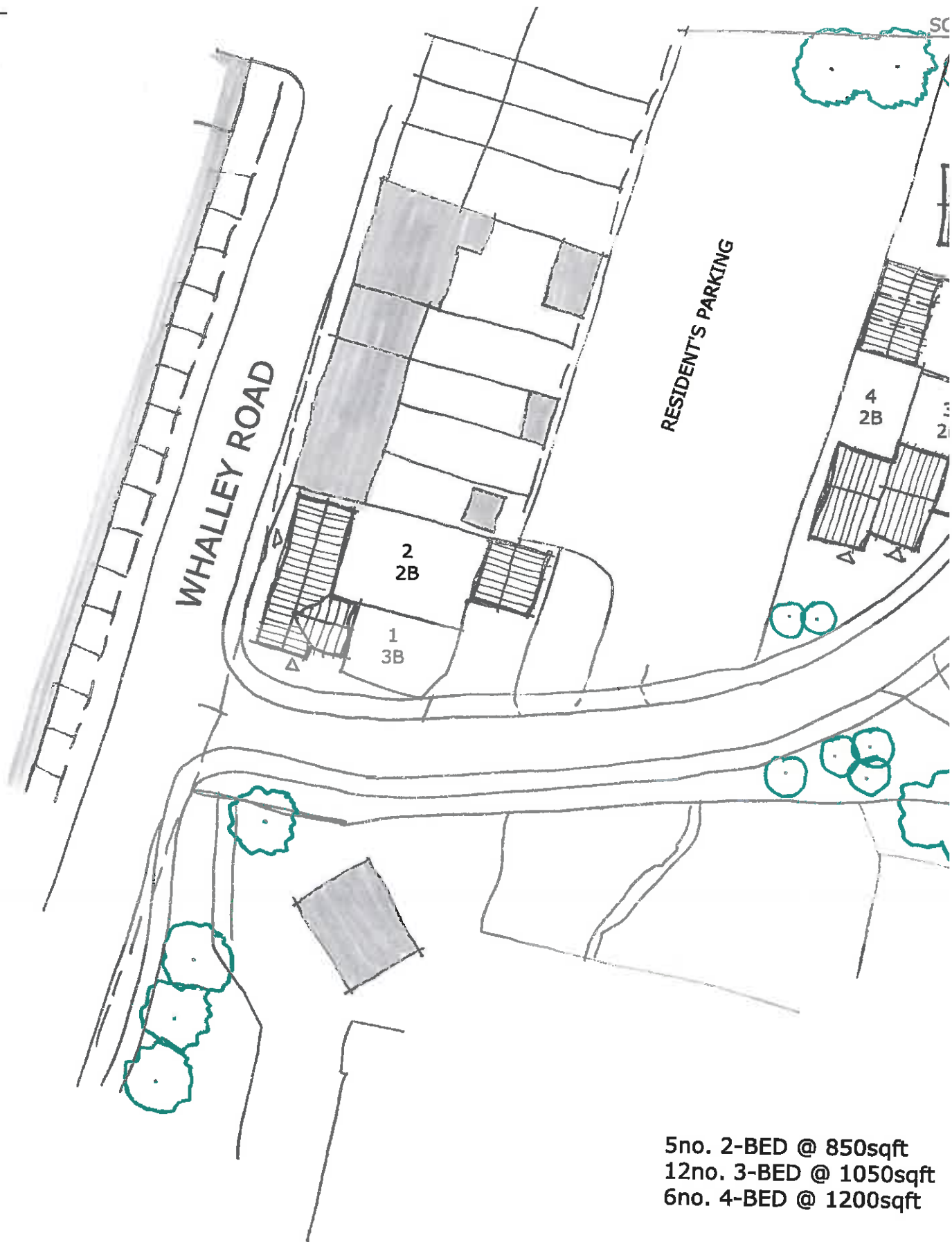


b) Stabiliser strut mounted on block tray

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REVISION: 1	DESCRIPTION: [illegible]





5no. 2-BED @ 850sqft
12no. 3-BED @ 1050sqft
6no. 4-BED @ 1200sqft

