

This preliminary calculation determines the Root Protection Area (RPA) for the retained tree using BS 5837:2012, Trees in relation to design, demolition and construction

Applicable BS 5837:2012 calculation

For a single-stem tree, BS 5837:2012, Section 4.6, requires the RPA to be calculated as an area equivalent to a circle with a radius of 12 times the stem diameter. The calculated RPA is subject to a maximum cap of 707 m².

Worked calculation:

- 1. Stem diameter = 1.05 m = 1,050 mm.
- 2. RPA radius = stem diameter × 12 = 1.05 × 12 = 12.60 m.
- 3. RPA diameter = 2 × 12.60 = 25.20 m.
- 4. RPA area = π × radius² = π × (12.60)² = 498.76 m².
- 5. BS 5837 maximum RPA = 707 m².
- 6. Calculated area 498.76 m² is below 707 m², therefore the full calculated RPA applies.

Results:

Required BS 5837:2012 RPA radius: 12.6 m from the centre of the tree stem.

Required RPA area: 498.8 m² (approximately 499 m²).

Equivalent RPA diameter: 25.2 m.

Relationship to crown spread: the stated radial crown spread is 10 m, whereas the calculated RPA radius is 12.6 m. The RPA therefore extends approximately 2.6 m beyond the stated crown radius, subject to any site-specific arboricultural assessment.

Construction considerations:

- The RPA should be treated as a protected root/soil zone during the design and construction process.
- Construction access, excavation, material storage, plant movement and ground compaction should be kept outside the RPA unless specifically justified and agreed through the project arboricultural process.
- This RPA is also the tree constraints plan showing the proposed building, foundations, drainage, services, access and temporary works.
- Construction Exclusion Zone (CEZ) and protective fencing should be established in accordance with the project Method Statement (MS) before construction activity starts.

Assumptions and limitations:

- This is a preliminary BS 5837:2012 RPA calculation based on the information supplied. The 1.05 m stem diameter is assumed to be the diameter measured in accordance with BS 5837:2012 at the relevant stem measurement position (normally 1.5 m above ground level for a single-stem tree). The tree species, height, age class and crown spread do not alter the basic single-stem RPA formula.
- Actual RPA shape may be modified from a circle where a competent arboricultural assessment demonstrates that existing structures, hard surfaces, soil conditions, drainage, topography or other site constraints have materially influenced root distribution.

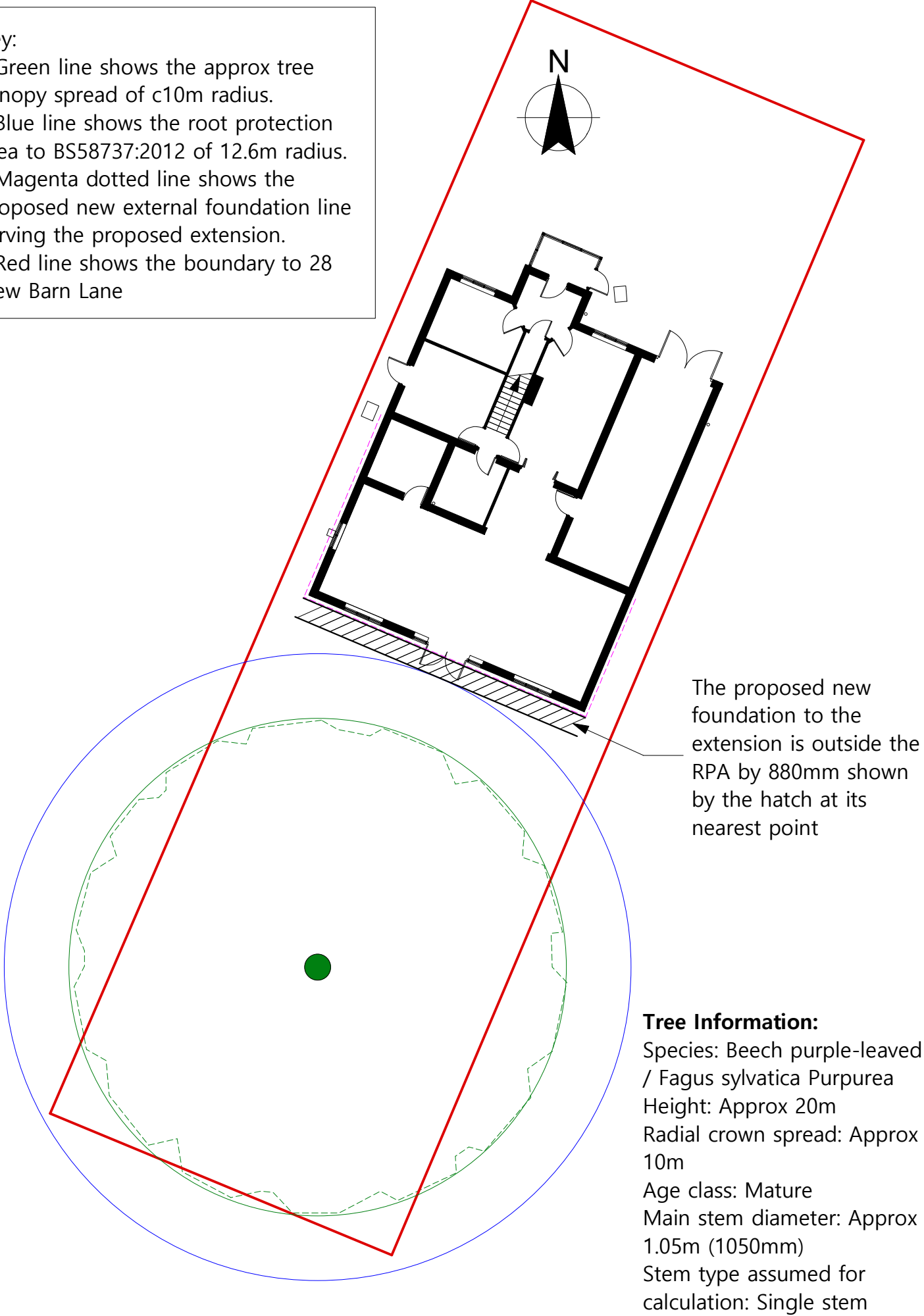
Key:

- Green line shows the approx tree canopy spread of c10m radius.

- Blue line shows the root protection area to BS58737:2012 of 12.6m radius.

- Magenta dotted line shows the proposed new external foundation line serving the proposed extension.

- Red line shows the boundary to 28 New Barn Lane



Tree Information:
Species: Beech purple-leaved / Fagus sylvatica Purpurea
Height: Approx 20m
Radial crown spread: Approx 10m
Age class: Mature
Main stem diameter: Approx 1.05m (1050mm)
Stem type assumed for calculation: Single stem

All dims and details to be checked on site prior to any commencement of work. This plan is not a full specification or schedule of work and has been produced solely for the purpose of obtaining the necessary local authority consents/approvals For Party Wall etc. Act 1996 see Government booklet or website.	Status:			Client: Mr J Farci 28 New Barn Lane Felpham Bognor Regis West Sussex PO22 8LN	Revision: A	Project: Rear extension and alterations
	Preliminary	☐	Tender	☐	Scale: 1:200 @A3	Content: Tree and root protection area
	Planning	☒	Construction	☐	Date: Sept 26	
	Building Regulations	☐	As Built	☐	Dwg No: JF005	