Tree Protective Fencing

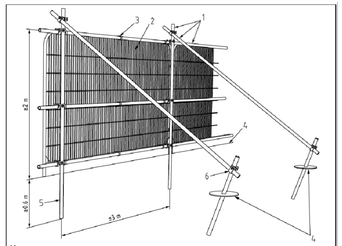
- Trees for removal to be identified from the drawing and marked by an arboriculturist.
- No vehicles to enter the grass verge or root protection zone during tree removal or fencing installation/removal.
- Fencing to be installed prior to any construction works (including demolition, materials delivery, works compound installation).
- The location of the tree protective fencing is indicative only and must not be directly measured from this plan. Its true location must be surveyed accurately on site and where applicable be measured from the tree centre by the stated dimension value.
- Fencing to remain in place until all construction works have ceased.

BS5837: 2012 Recommendations (extract)

6.2.2 - Barriers
6.2.2.1 - Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.
6.2.2.2 - The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

Default Fencing Specification

The fencing will consist of a scaffold framework supporting standard GS7/Heras styled steel security fencing panels. **The scaffolding will consist of vertical poles set no more than 3m apart onto which 3 horizontal poles are securely clamped with the whole structure braced with diagonal poles (see diagram below for layout of scaffold poles).** The Heras styled panels must be securely fixed to the scaffold structure using wire or other fixings.



Key
1. Standard Scaffold poles
2. Heavy gauge 2m 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 ground until secure (min depth 0,6m).
6. Standard scaffold clamps.

Why Is Fencing Erected Around Trees?

- The major cause of damage to trees on construction sites is due to soil compaction.
- Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
- Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.
- A compacted soil structure will stay compacted.
- Consequently the tree suffers and will show signs of branch die-back.
- Symptoms such as die-back may take several years to appear.
- Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
- The exclusion zone is calculated using British Standard 5837.
- Protective Fencing is installed around the calculated area.
- Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

SITE SPECIFIC ARBORICULTURAL METHOD STATEMENT;

GREENFIX GEOWEB 3-DIMENSIONAL CELLULAR CONFINEMENT INSTALLATION

In order to provide the necessary protection to the trees' roots it will be necessary to form the new access and driveway using a 3-dimensional cellular confinement system. The system chosen by the customer is a product provided by Greenfix called GEOWEB .
The works will be carried out by the Project Manager appointed by Greenfix.

Step 1: Remove all the vegetation using proprietary hand tools such as chainsaws, bladed strimmer's and hand-tools as appropriate and in accordance with manufacturer's instructions and ensuring all operators are suitably qualified and experienced. Any stump grinding will be carried out using a hand-held, wheeled and manually operated machine. This work will be carried out under the supervision of the retained Arboricultural Consultant.

Step 2: Remove the upper grass and soft soils using a flat-bladed bucket operated from a manually operated 1 t tracked machine working from existing hard surfacing and pulling all material away from the site. The tracked vehicle does not have to be operated over ground protection as it is scientifically proven that the downforce is less than a human in shoes. Slewing of the tracked vehicle will have to be carried out over a ground plate. This work shall be conducted under the supervision of the retained Arboricultural Consultant.

Step 3: Augmenting of levels shall be carried out using sharp (washed) sand where necessary. No builders sand shall be used due to the salt content levels.

Step 4: Install Greenfix TRP 4000 high-strength non-woven geotextile allowing adequate drainage as a separation layer between soft subgrade and GEOWEB infill material.

Step 5: Expand GEOWEB sections over the area to be protected and use temporary stakes or weights to hold sections open to prevent movement during infilling.

Step 6: Connect adjacent sections using ATRA Keys. Position the sections so the slots are aligned, insert the key and turn 90 degrees locking the panels together. ATRA Keys provide a long-term connection that is safer, quicker and stronger than staples or cable ties. In environmentally protected areas, ATRA Keys can be used without the requirement for diesel-fuelled compressors.

Step 7: For permeability, infill the fully connected GEOWEB system with a well-graded, 4/20 mm granular, non-frost-susceptible quarried rock with no fines. Overfill by up to 50mm to allow for compaction.

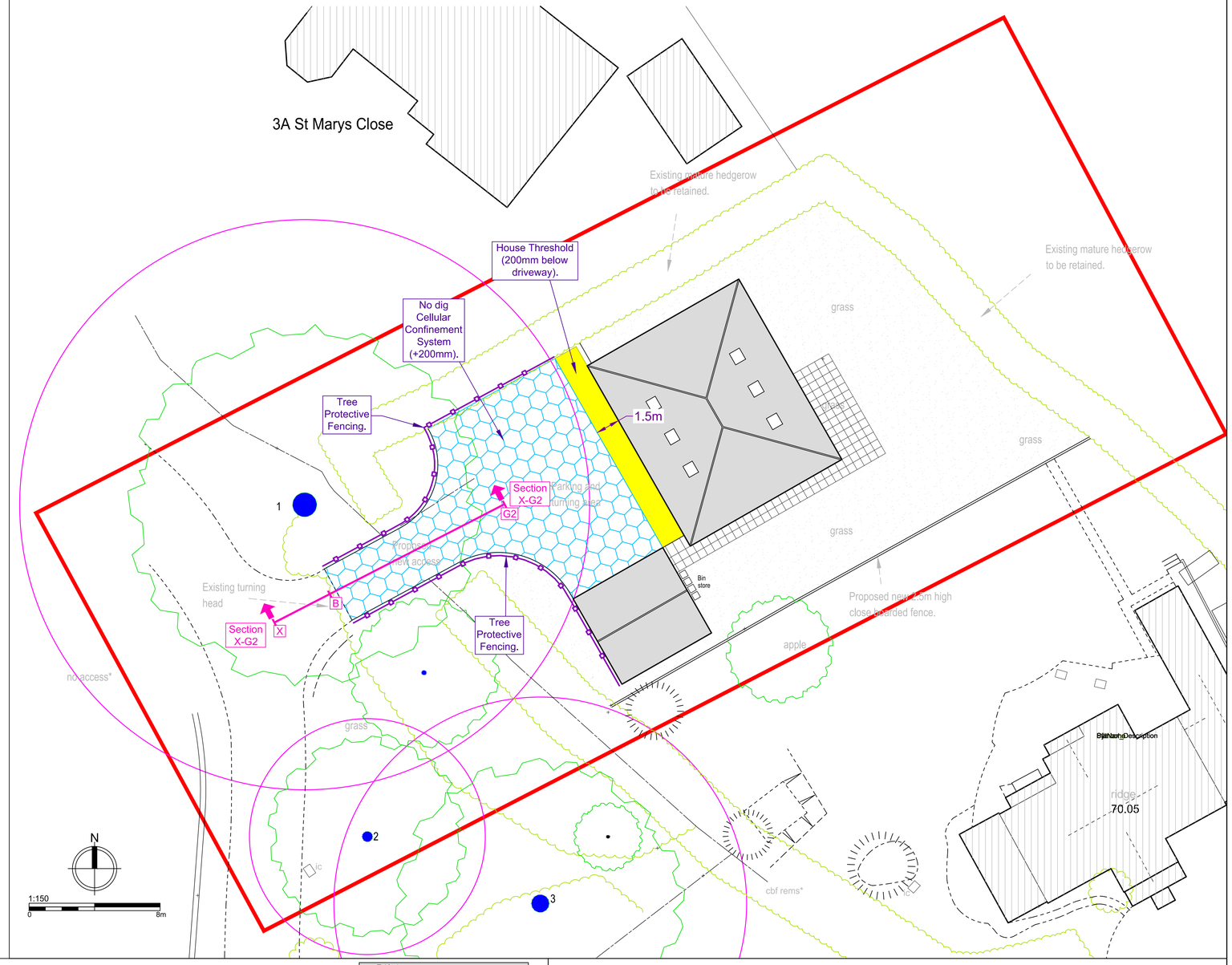
Step 8: Fill material should be maintained above the GEOWEB system by a minimum of 10 mm at all times. Final surfacing materials may then be placed in line with our recommendations in our installation method statement.

There will be a raise in level by 200 mm to form the driveway. This new threshold will form the new divide between parking and living. A stepped threshold will exist at approximately 3 m from the front face of the house where planting or planters can be installed if desired to provide a form of low-level boundary or screening.

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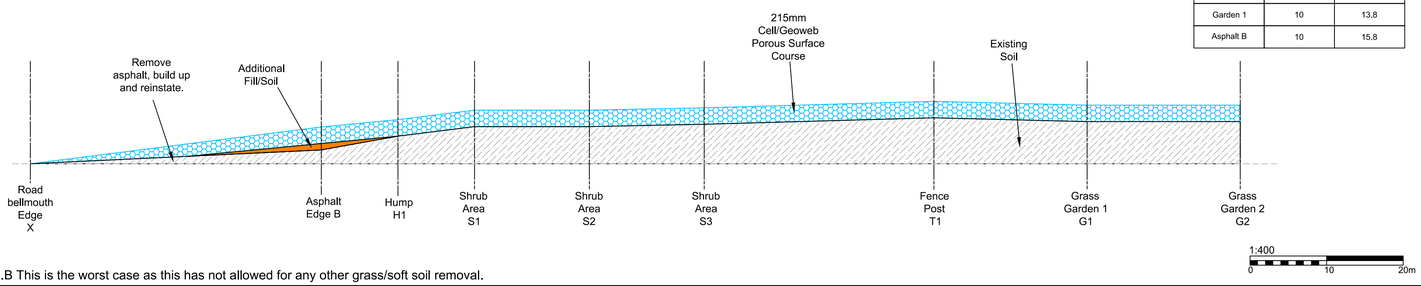
Key

- Trees Showing Location
- BS 5837:2012 Root Protection Area
- Tree Protective Fencing
- House Threshold (200mm below driveway).
- No dig Cellular Confinement System. (+200 mm)
- Site Survey Area Extents

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements. Depictions of tree canopies are based on measurements taken to four cardinal compass points. No liability of any kind Is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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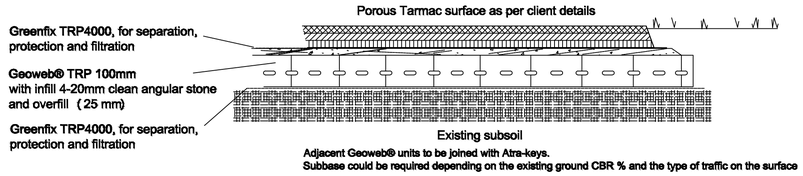
Cross Section X-G2 (to demonstate access can be constructed)

Table 1		
REF	DATUM +/- 10m	CHAINAGE (m)
Road X	9.450	0
Asphalt B	9.630	3.8
Hump 1	9.810	4.8
Shrub Area 1	9.935	5.8
Shrub Area 2	9.935	7.3
Shrub Area 3	9.965	8.8
Fence Post T1	10.050	11.8
Garden 1	10	13.8
Asphalt B	10	15.8



N.B This is the worst case as this has not allowed for any other grass/soft soil removal.

Standard/ Generic detail for porous Tarmac surface on-top of Geoweb®



Adjacent Geoweb® units to be joined with Atra-keys.
Subbase could be required depending on the existing ground CBR % and the type of traffic on the surface

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CB	MB
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