



## **Appendix: 2: Specifications & Standards**

“Public Open Space Landscape Works Specifications for inclusion in contract documentation for Housing Schemes which will be taken in charge by Fingal County Council”

### **Environment**

**PUBLIC OPEN SPACE LANDSCAPE WORKS SPECIFICATIONS FOR INCLUSION  
IN CONTRACT DOCUMENTATION FOR HOUSING SCHEMES WHICH WILL BE  
TAKEN IN CHARGE BY FINGAL COUNTY COUNCIL**

**Environment Department**

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**Sections:**

1. Protection of Trees, Hedgerows and other Vegetation
2. Protection of Existing & Proposed Open Space areas
3. Stripping and storage of Topsoil and Subsoil
4. Drainage of Grassed Open Space areas
5. Grading and Cultivation
6. Topsoil
7. Seeding of grass areas
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## 1. Protection of Trees, Hedgerows and other Vegetation

### General

All trees and hedgerow and other vegetation which are being retained on site should be protected by barriers and or ground protection in accordance with **British Standard 5837:2005 Trees in relation to construction – Recommendations.**

Vertical barriers should be erected and ground protection installed before any materials or machinery are brought onto the site and before any demolition, development or stripping of soil commences.

Once erected, barriers and ground protection should be regarded as sacrosanct, and should not be removed or altered without prior approval of the Parks Division.

### Barriers

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). On all sites, special attention should be paid to ensuring that barriers remain rigid and complete.

Barriers should consist of a scaffold framework in accordance with Figure 2 of BS 5837 comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this, weldmesh panels should be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and must not be used.

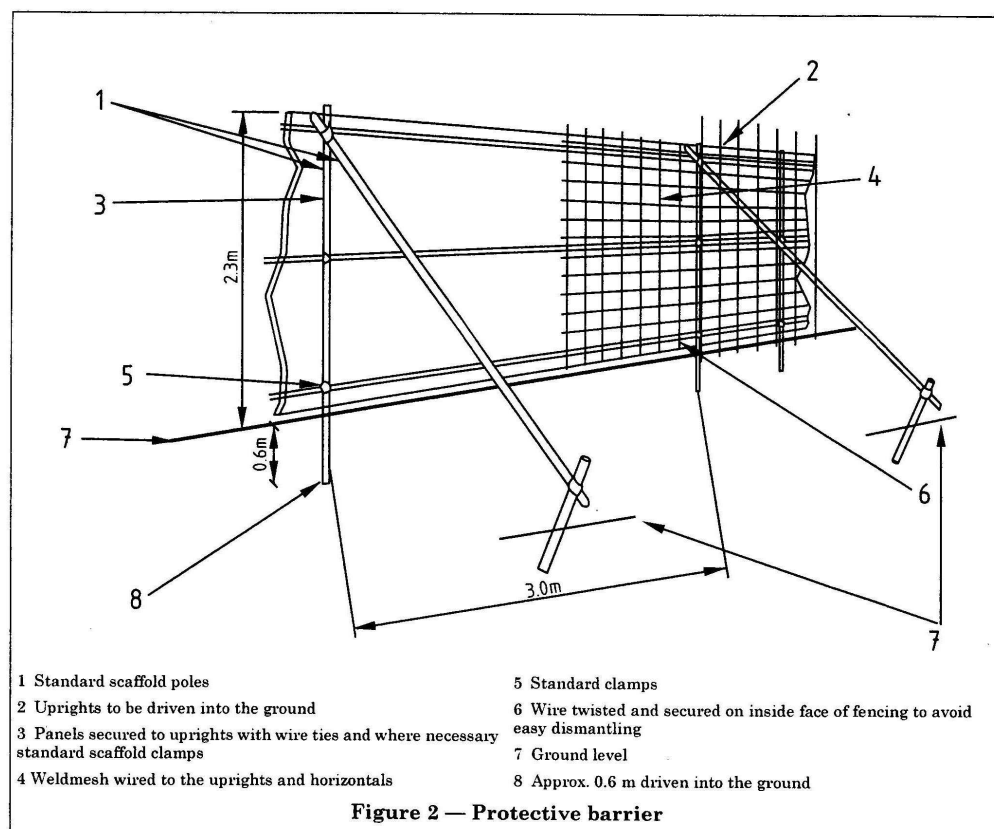


Fig 2 BS 5837

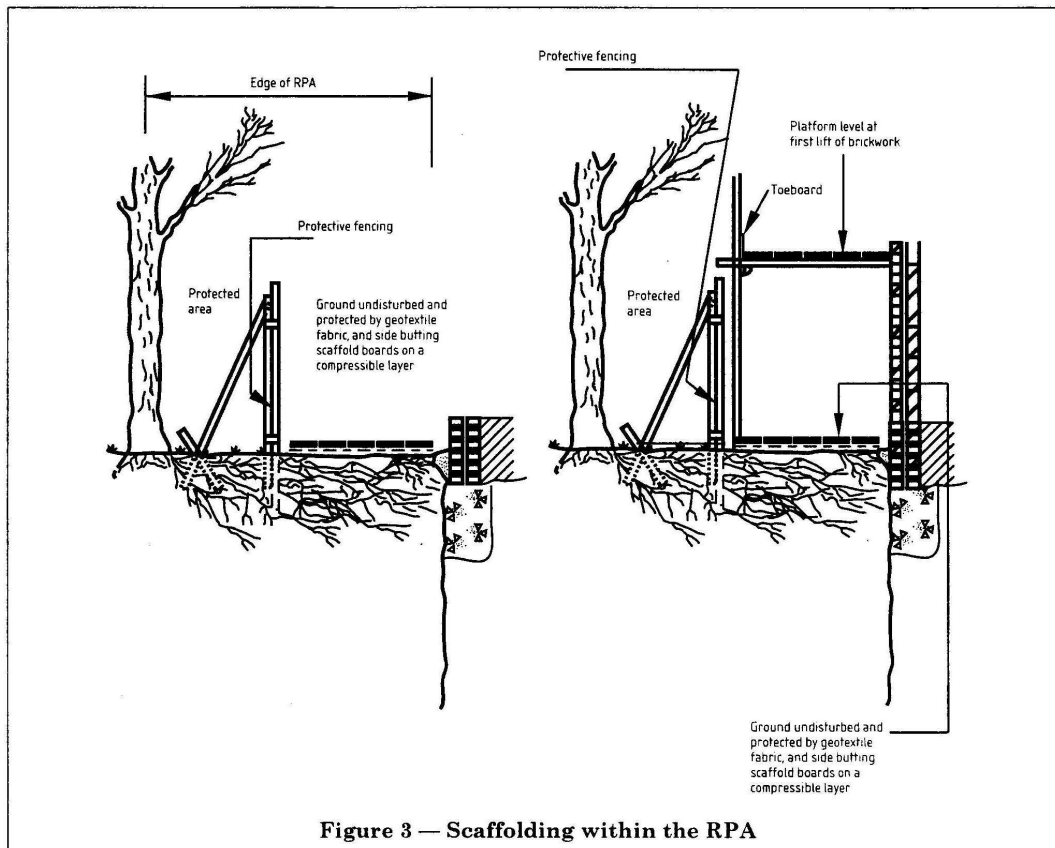
## Ground protection

Where it has been agreed during the design stage, and shown on the tree protection plan, that vehicular or pedestrian access for the construction operation may take place within the root protection area (RPA), the possible effects of construction activity should be addressed by a combination of barriers and ground protection.

For pedestrian movements within the RPA the installation of ground protection in the form of a single thickness of scaffold boards on top of a compressible layer laid onto a geotextile, or supported by scaffold, may be acceptable (as per Figure 3 of BS 5837).

For wheeled or tracked construction traffic movements within the RPA the ground protection should be designed by an engineer to accommodate the likely loading and may involve the use of proprietary systems or reinforced concrete slabs (as per 11.8 & 11.9 of BS. 5837).

Access into the RPA and Ground Protection must be agreed in advance with the Parks Division.



### **Additional precautions outside the exclusion zone**

Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices should be erected on the barrier with words such as

“Construction exclusion zones – Keep out”.

In addition the following should be addressed or avoided:

Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times

Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10m of the tree stem.

Fires must not be lit in a position where their flames can extend to within 10m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

Notice boards, telephone cables or other services should not be attached to any part of the tree.

It is essential that allowance should be made for the slope of the ground so that damaging material such as concrete washings, mortar or diesel oil cannot run towards trees.

## **2. Protection of Existing & Proposed Open Space areas**

Existing open space areas for retention and proposed open space areas should be protected from damage, (especially soil compaction due to construction activity) by the erection of barriers

Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place. Special attention should be paid to ensuring that barriers remain rigid and complete.

Barriers should consist of a scaffold framework in accordance with Figure 2 of BS 5837 comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this, weldmesh panels should be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and must not be used.

### **3. Stripping and storage of Topsoil and Subsoil**

Where Topsoils and subsoils are to be stripped they should be carefully stripped and stockpiled in reasonably dry conditions to avoid unnecessary compaction and damage to soil structure. They should be stacked separately and strict precautions should be taken to prevent the mixing of subsoil and topsoil. Topsoil heaps should not exceed 3m in height and 6m in width at the base, and should be used within 12 months. If a greater time is needed for stacking, special precautions and remedial procedures will be necessary (as per 4.8.3 BS.3882) While soil is stacked, the stack should be seeded with a perennial rye grass seed mixture to control the spread of weeds and unwanted vegetation, reduce surface run off and for improved visual appearance. Vegetation that has established on the soil heap should be removed by the application of a translocated herbicide e.g. Glyphosphate at least 2 weeks prior to the spreading of the soil.

### **4. Drainage of Grassed Open Space areas**

Where drainage works are required they shall be constructed in accordance with British Standard Specification 4428; 1989, entitled "Code of Practice for General Landscape Operations", Section 3.

### **5. Grading and Cultivation**

#### **General:**

Areas to be grassed over shall be graded to a uniform level depending on the contours.

"Flat" grassed areas shall be graded to a general "domed" grade such that a continuous run off shall occur leaving no puddles after heavy rain.

Planted beds adjoining hard surfaces, manholes etc., shall be finished flush with such areas and

grassed areas finished 25mm higher.

All grassed open space areas should be suitably graded so that the areas can be safely cut by four-wheel drive ride on mowers.

### Formation of grassed banks and slopes for ease of maintenance:

The top and toe of grass banks should be rounded. The curve to be followed should be a slack double curve as per fig 3 (b) of BS 4428 with a maximum slope of 1:5 and should be such that machine maintenance will be possible. A level verge should be provided between the bank edge and its boundary of at least 2m in width.

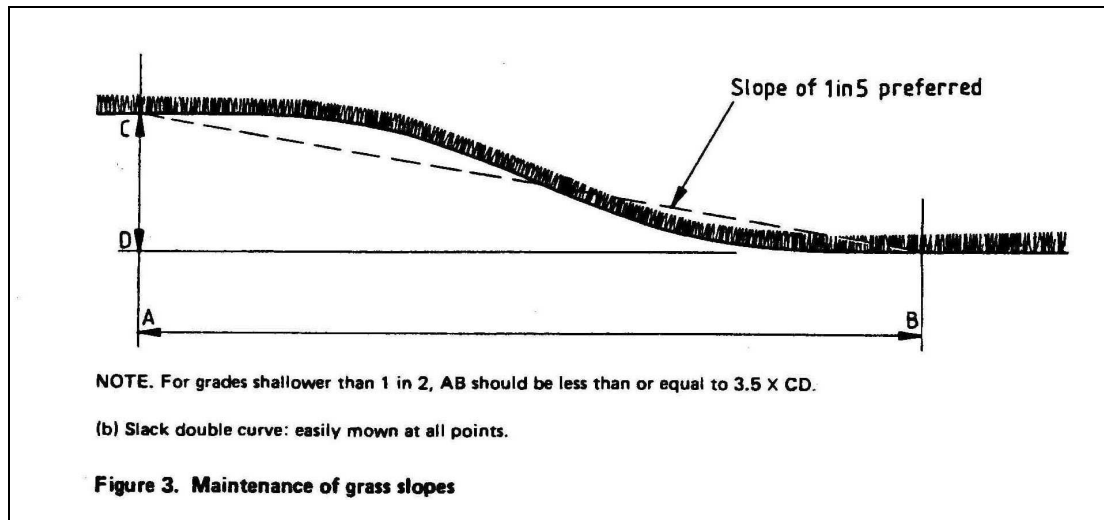


Fig 3 (b) of BS 4428

### Softworks around existing trees/vegetation for retention

Tree roots are usually located very close to the soil surface. Accordingly Tractor mounted rotavation or other heavy mechanical cultivation should not occur within the root protection area of trees/vegetation that are to be retained on the site. Any cultivation within this area should be undertaken carefully by hand or pedestrian controlled light machinery in order to minimise damage to the tree, particularly the roots. Changes of ground level within the root protection area of established trees should be avoided.

### Preparation of subgrade (where all Topsoil and Subsoil has been removed)

After completion of general excavation and filling to subgrade levels, and prior to the replacement of subsoil and topsoil, areas should be graded with a rigid blade grader to true, flowing contours. For general grassed area, the maximum limit of deviation from planned gradient or given levels should be  $\pm 150\text{mm}$ .

Depending upon the soil texture and degree of compaction, the subgrade should be loosened to a depth of not less than 600mm with a ripper attachment equipped with a minimum of three tines spaced at intervals of not greater than 1.2m.

Straight tines may be used for tight scarifying up to 150mm in depth, but for greater depths and where thorough disturbance of the surface is required, tines should be fitted with heavy duty winged shanks. In order to minimise the possibility of waterlogging or erosion, and to ensure maximum shatter of the subgrade, ripping should be carried out in dry conditions and in at least two directions set obliquely across the slope of the ground.

Large stones greater than 150mm in any dimension brought to the surface by operations should be picked off and disposed of at depth of at least 1m below final levels.

In circumstances where the subgrade consists mainly of chalk, deep ripping to bring up large blocks of materials and flints should be avoided, but the surface should be lightly scarified to avoid forming a pan, and to promote drainage. This should also apply in cases where the subgrade in areas of excavation is in rock and where the surface layers of fill have been constructed using material containing a high proportion of rock.

### **Preparation of Subsoil**

Following completion of operations at subgrade level, subsoil from designated stockpiles should be replaced in an even layer and graded to even, running contours

The finished surface (formation) of subsoil so replaced should be prepared free of localised depressions and to a maximum permitted deviation of  $\pm 100$  mm from planned gradients or given levels.

**In situations where only the topsoil has been removed** the area should be regulated to true running contours by blade grading within the subsoil depth. High areas should be reduced and the resultant material should be used to fill the low areas. A continuous depth of subsoil should be retained over the entire area

Prior to the replacement of topsoil, subsoil should be ripped to full depth or as otherwise needed, and the surface should be picked free of stones greater than 100mm in any dimension.

For well-compacted and cohesive subsoil material, ripping to full depth with heavy duty winged shanks may be necessary.

Additional penetration of between 50mm and 100mm into the underlying subgrade is recommended as a means of eradication any panning of the subgrade or the creation of impeded drainage interfaces caused by earth moving vehicles during subsoil replacement operations.



### **Preparation of topsoil where original native topsoil has not been removed.**

Two weeks prior to cultivation non-residual herbicide e.g. Glyphosphate should be applied at recommended rates.

Where land is covered with a thick sward (but free of any vegetation for retention) the soil should be broken up to the full depth of the topsoil by use of a disc plough or rotary or fixed tine cultivator

Hard ground should be broken up with a ripper operated in transverse directions; this will expose large roots and boulders which should be removed from the site

Where vegetation has been removed, woody roots within the cultivated depth should be brought to the surface and should be removed from the site

Tufts of grass and other vegetable matter should be raked out and removed. Large stones (75mm and over) should be removed from the site.

The topsoil should be cultivated to result in a soil condition such that particles are small and dry enough to run freely with a blade grader

## **6. Topsoil**

### **Topsoil Specification**

Topsoil shall be as a minimum standard 'General purpose grade' as per British Standard 3882: 1994 'Specification for Topsoil'

Topsoil shall be good quality medium top spit loam, easily moulded when moist but not very sticky and not leaving a smooth surface when smeared. It shall be free from sub-soil, chemical or other pollution, noxious weeds, roots, turf, couch grass, rubbish, or an excessive proportion of clay, sand, gravel, chalk or lime. It shall not contain stones or flints in quantities exceeding 10% of the total bulk and those present shall not exceed 50mm in any dimension.

Where topsoil is to be imported, the contractor shall submit a sample load for approval and shall ensure that all subsequent deliveries are similar to the approved sample load

## **Spreading**

Topsoil should be handled carefully during spreading to avoid damage to structure by machine induced compaction. Replacement of topsoil should not be carried out in wet conditions.

Topsoil should be spread evenly in layers not exceeding 150mm thick. Finished thickness should be for grass areas to be 100mm to 150mm, after firming. Where shrinkage of topsoil takes place the finished level should be made good to within the Defects Liability Period.

## **Cultivation of topsoil**

After spreading, the topsoil should be cultivated to a condition suitable for blade grading. Large and unwanted material (75mm and over) should be picked off and removed.

## **7. Seeding of grass areas**

Seed should be from a certified source a sample submitted in advance to the Parks Division for approval. In general, a number 3 amenity mix is to be used.

### **Preparation of seed bed**

In preparation for sowing, the surface should be cultivated to remove compaction and should be contoured to true running levels. The surface should be lightly and uniformly firmed and reduced to a friable tilth by raking or harrowing. All surface stones from 10mm to 50mm in any dimension, dependent on the mowing height required, should be removed from the surface.

### **Sowing**

Sowing should be carried out during suitable calm weather conditions at a rate of between 150 kg/h to 200 kg/h for the machine seeding of large areas. The operation should be carried out in equal sowings in transverse directions. After sowing, the ground should be lightly raked or harrowed and should then be firmed with a lightweight roller.

## **8. Grass sward establishment works:**

### **Initial Cut**

Immediately before cutting, all stones above 25mm in any dimension should be hand picked and the area should be crossed with a lightweight roller to firm the grass and consolidate the surface.

When the grass is established and from 40mm to 75mm high, according to the seed mixture, it should be topped with a rotary mower so as to leave from 25mm to 50mm of growth and to cut weeds, in order to control the growth of coarser grass and to encourage tillering.

Grass cutting machinery should be very sharp and in good condition to avoid pulling out young seedlings.

Grass cutting should take place during dry conditions when the soil is not soft or waterlogged.

### **Maintenance**

The contractor will be responsible for 4 No. post-seeding grass cuts. Grass cuts shall, during the growing season (April – October) be carried out roughly at fortnightly intervals so as to maintain the grass at a height of not more than 50 mm and not less than 25mm. Grass cutting carried out outside the growing season shall be at intervals of not less than 3 weeks so as to maintain the grass at a height of between 25 and 50mm.

Following the successful and satisfactory completion of the 4<sup>th</sup> cut as approved by the Parks Division, the ongoing grass maintenance will become the responsibility of the Parks Division.

Grass maintenance work carried out by or on behalf of Fingal County Council following the 4<sup>th</sup> grass cut will not negate the contractor's responsibilities in respect of the Defects Liability Period.

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