7.6 ~ Trees and Ornamental Planting...

Appropriate Use of Planting

Trees and other ornamental planting within urban environments offer a number of benefits that improve the visual and environmental quality of the public realm. Having said this, the use of planting is not appropriate in every location and the aim must be for quality over quantity. New planting should only be undertaken where it would make a positive contribution to the public realm, such as:

- Providing a focal point or framing a focal point or view;
- Demarcating routes and highlighting key transport corridors, through the use of boulevards and avenues;
- Improving the scale and proportion of very wide streets and spaces;
- Acting as a sound barrier to reduce noise levels on roads;
- Improving air quality and helping to neutralise carbon emissions;
- Providing shelter from wind, rain and sunlight;
- Improving the urban ecosystem by supporting a variety of wild life; and
- Helping to screen ugly or blank facades.

Strategy in Relation to Existing Trees

There are a limited number of trees currently found with Chester's city centre due to the narrowness of the streets that make up the historic urban core. The mature trees that are found tend to be associated with open spaces around the Cathedral, Grosvenor Park, the riverside and canal. The majority of these mature trees are Common Lime (Tilia x europaea) and this distinctive tree contributes a great deal to the city's character. A number of these trees have been heavily pollarded and pruned in the past to try and control their growth, particularly where they are located close to buildings.

Another tree species commonly found along the route of the walls (where it has had an opportunity to self-seed) is Acer pseudoplatanus (Sycamore). Although not a particularly valued species, these trees do contribute to the experience of walking the walls.

It is recommended that the city centre's existing trees are evaluated on their individual merit to determine whether they should be retained, removed or replaced. Consideration should be given to their current appearance, and condition and future management implications (particularly where they are close to buildings). Existing trees should be retained, wherever possible, where they add value to the public realm, and appropriate management works carried out.

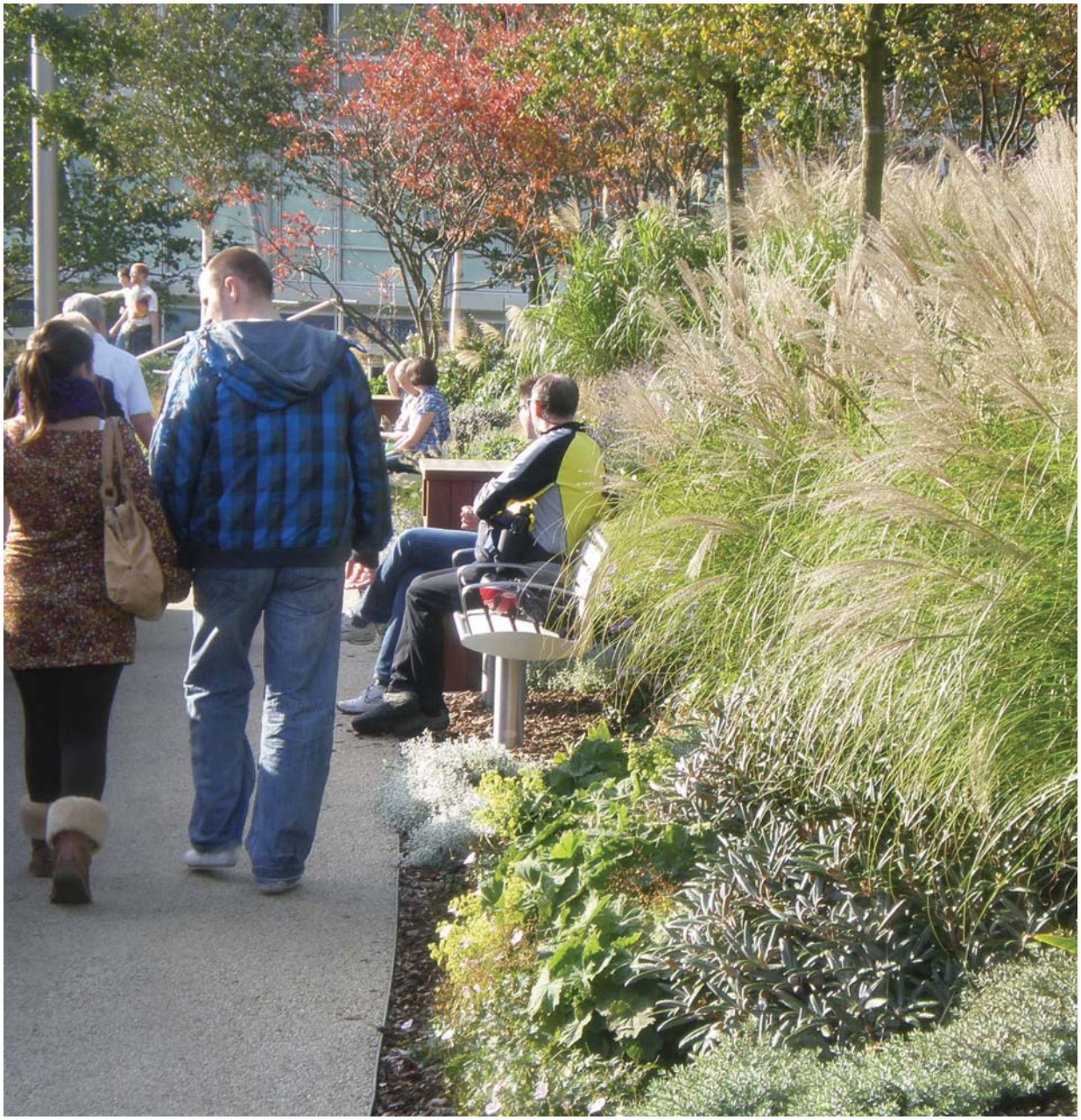
Another important factor in carrying out this assessment is whether these mature trees are obscuring important views. For example, the views from the City Walls would benefit from the thinning of Sycamores in some locations.

Lime Trees Along The Groves

Future Strategy

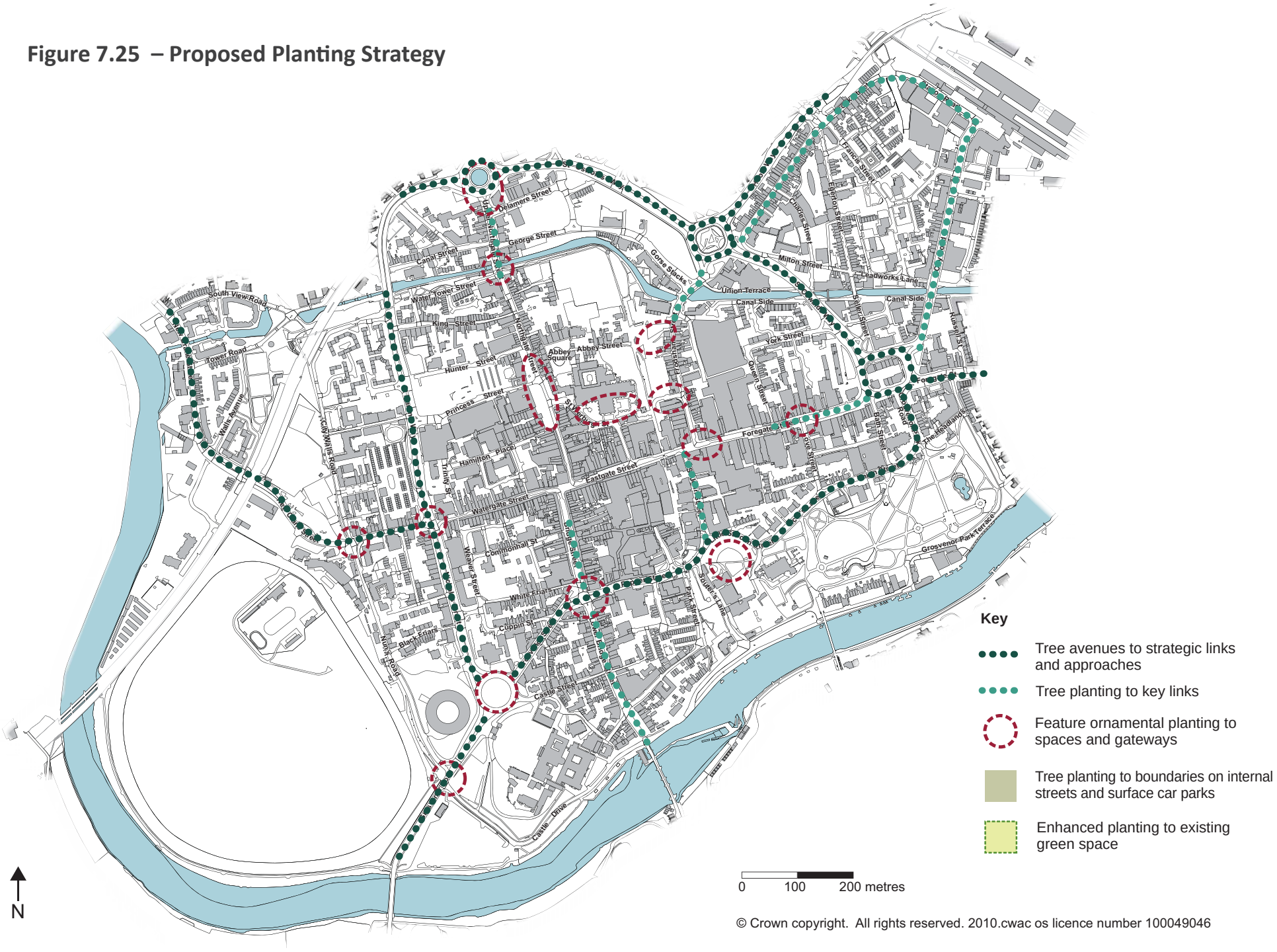
As previously identified, tree planting along every street within the city centre would not be appropriate due to the limited space and importance of the architecture, nor is it needed as the majority of streets in the historic core are attractive routes. It is therefore proposed that new tree planting is focused on the following locations which are illustrated in the planting strategy shown in Figure 7.25 overleaf.

It is important to note that the strategy shown in Figure 7.25 is aspirational and is subject to further detailed investigations being carried out to determine feasibility. In addition to the strategy outlined there may be other locations where it would be appropriate to carry out street tree planting in the future. In any situation where space is limited and the greening of a street is considered important, planters containing a mix of shrubs and perennials should be used.



Example of Perennial and Tree Planting in Chevasse Park, Liverpool

Figure 7.25 – Proposed Planting Strategy



General Principles

Siting

Trees should only be planted where it is appropriate and consideration should be given to the following factors that will influence siting:

- Adequate space for mature canopy and roots
- Natural surveillance/position of CCTV cameras
- Impact on night-time lighting levels
- Views of important and attractive building facades
- Underground services (in important locations and where budget allows consideration should be given to rerouting and grouping services in ducts).
- Proximity of vehicle and pedestrian routes

Species Selection

It is essential that the tree species selected for a particular location is an appropriate choice. To help enable this choice, the following factors should be considered:

- Growing Requirements: Some species are more suited to urban environments (e.g more tolerant of compaction around the base of their roots). Shallow rooting species can cause disruption to paved surfaces (e.g Prunus spp.). Light and shelter requirements are also relevant. It is important that in response to climate change, species are also selected for their ability to withstand drought or waterlogged conditions.
- Size and Scale: Street trees should be specified as semi-mature (20cm girth +) specimens as a minimum, with a stem clearance of 2.1m where they are within a paved area. A more robust tree will stand up to the impact vandalism. The future height and width of a tree should be considered to ensure compatibility with the scale of a space at full maturity.
- Form and Habit: Canopies should display and generally retain a tidy and balanced shape.
- Canopy density and leaf size: Where larger trees are specified, species should be selected that have more open canopies so that light can penetrate through to the street below. Smaller trees provide the opportunity for a denser canopy. The generation of plant litter (leaves and fruit) will be a maintenance (and health and safety consideration), as well as species that are prone to honeydew.
- Aesthetics: Trees should be selected for their high amenity value and seasonal interest. Feature trees should be selected for their distinctive colour and form and for their year-round seasonal interest.

The following pages set out the tree species that have been selected as suitable for planting within the city centre under the hierarchy set out in the planting strategy. These include Lime species/ cultivars chosen to reflect the high proportion of existing Limes found in the city centre.

Street Tree Planting George Street, St Helens

Tree Avenues to Strategic Approaches and Routes

In comparison to the city centre core, a number of Chester's strategic approaches and routes are of poor visual quality and dominated by vehicles. Avenue tree planting should be used, wherever possible within verges and central reservations, to define and raise the visual quality of routes. This will help to improve first impressions of the city on arrival by car/bus and also create a pedestrian friendly environment for those walking into the city across the inner ring road from the railway station and residential areas.

In order to successfully achieve these objectives, avenue trees must be of a single species at a consistent spacing along a route. It is anticipated that trees along these routes would be medium-large sized (see species table for appropriate examples). Where scope to accommodate trees is limited, trees should generally only be planted if at least a row of three trees can be accommodated at any one location.

Suitable medium –large size avenue trees for strategic approaches and routes

Species	Height and spread at maturity	Growing requirements	Form and features
Acer rubrum 'Armstrong' (Red Maple cultivar)	10m height, 3m spread.	Will tolerate alkali conditions, but not at its best in these conditions.	Large, narrow tree. Dramatic red autumn colour.
Carpinus betulus 'Streetwise' (Common Hornbeam cultivar)	9m height, 3m spread	Generally tolerant of a wide range of conditions (although prefers soils to be not too light/dry)	Striking orange/yellow autumn colour.
Tilia cordata 'Streetwise' (Small Leaved Lime cultivar)	10m height, 6m spread	Suited to difficult urban environments.	Medium/large tree. Shiny dark green foliage. Neat balanced form. No problem with aphids in summer.
Tilia platyphyllos 'Streetwise' (Broad Leaved Lime cultivar)	12m height, 4m spread	Suited to difficult urban environments.	Large tree with upright habit. Striking red shoots in winter and purple/brown autumn colour. Locate in areas of soft landscape – as not aphid free.
Tilia x euchlora (Lime species)	10m height, 6m spread	Tolerant of a wide range of conditions	Medium sized tree, dark shiny green foliage. No problem with aphids in summer.
Tilia tomentosa 'Chelsea Sentinel' (Silver Lime cultivar)	10m height, 5m spread	Tolerant of a wide range of conditions	Large tree with attractive weeping branches, but generally columnar form. Delicate leaves with silver underside. Aphid free

Acer rubrum 'Armstrong'
(Red Maple cultivar)

Carpinus betulus 'Streetwise'
(Common Hornbeam cultivar)

Tilia platyphyllos 'Streetwise'
(Broad Leaved Lime cultivar)

Tilia x euchlora
(Lime species)

Street Trees to Key Links

There are a few key links into the retail core and to key destinations within the city that currently lack definition. The use of street tree planting along these routes would help improve the quality of the streets for pedestrians in particular, creating attractive vistas and encouraging visitors to explore further afield. Again, consistent use of species will be important at these locations using regular spacings. It is anticipated that trees along these routes would be small-medium sized (see species table for appropriate examples).

Suitable small – medium size street trees to key links

Species	Height and spread at maturity	Growing require-ments	Form and features
Acer campestre 'Streetwise' (Field Maple cultivar)	7m height, 3m spread	Tolerant of all soil types	Medium tree with neat, upright habit. Brilliant yellow autumn colour.
Carpinus betulus 'Frans Fontaine' (Common Hornbeam cultivar)	9m height, 2.5m spread	Best in well drained and rich soils, but can still thrive in sandy or dry soils.	Medium tree with narrow upright habit. Dark green leaves, yellow autumn colour.
Pyrus calleryana 'Chanticleer' (Ornamental Pear)	8m height, 3m spread	Very hardy and drought tolerant. Well suited to planting in streets.	Upright, tidy form. White blossom in spring. Glossy green leaves with good autumn colour.
Tilia cordata 'Rancho' (Small Leaved Lime cultivar)	8m height, 3m spread	Tolerant of a wide range of conditions/ situations.	Small/medium tree with upright conical habit and attractive dark green glossy foliage. No problem with aphids in summer.

Acer campestre 'Streetwise'
(Field Maple cultivar)

Pyrus calleryana 'Chanticleer'
(Ornamental Pear)

Pyrus calleryana 'Chanticleer'
(Ornamental Pear)

Tilia cordata 'Rancho'
(Small Leaved Lime cultivar)

Ornamental Tree and Other Planting to Spaces and Gateways

Ornamental tree planting should be employed at the key spaces and gateways identified in Figure 7.25 to announce arrival and emphasise a change in character of the public realm. Ornamental tree planting should be used in combination with ornamental shrub and perennial planting, where appropriate, as an integral part of the design of the space or gateway. Species should generally be consistently used, or at least used in bold blocks. Tree species in these locations are likely to vary in scale, depending on the space available, and will be selected for their distinctive, decorative features.

Suitable ornamental trees to spaces and gateways (ranging in size)

Species	Height and spread at maturity	Growing require-ments	Form and features
Acer platanoides 'Globosum' (Norway Maple cultivar)	4m height, 3m spread	Good on all soils (except where prone to waterlogging).	Small tree. Striking mop head shape (specimens can become wider than they are tall). Good yellow/orange autumn colour.
Acer platanoides 'Obelisk' (Norway Maple cultivar)	10m height, 1.5m spread	Good on all soils (except where prone to waterlogging).	Medium sized tree with striking columnar habit.
Amelanchier lamarckii 'Robin Hill' (Snowy Mespilus)	7m height, 2.5m spread	Tolerant of range of growing conditions.	Small tree. Narrow upright canopy. Early spring - white blossom. Oval coppery red leaves follow and rich red/orange autumn colour.
Betula nigra (River Birch)	10m height, 5m spread	Will tolerate extremely wet and dry soils.	Medium sized tree. Distinctive pink/orange flaking bark.
Fagus sylvatica 'Dawyck Gold' (Common Beech cultivar)	8m height, 2m spread	Any free draining soil.	Medium/Large tree with tight columnar habit. Striking form suited for planting in soft landscape as feature. Attractive yellow/green leaves.
Prunus serrula (Tibetan Cherry)	6m height, 4m spread	Tolerant of range of growing conditions.	Small tree. Shiny red/brown bark (particularly attractive as multi-stem).
Quercus palustris (Pin Oak)	10m height, 5m spread	Will not grow on alkaline soils.	Large tree with pyramidal form and attractive habit. Leaves turn scarlet red in autumn.

Acer platanoides 'Globosum' (Norway Maple cultivar)

Amelanchier lamarckii 'Robin Hill' (Snowy Mespilus)

Prunus serrula (Tibetan Cherry)

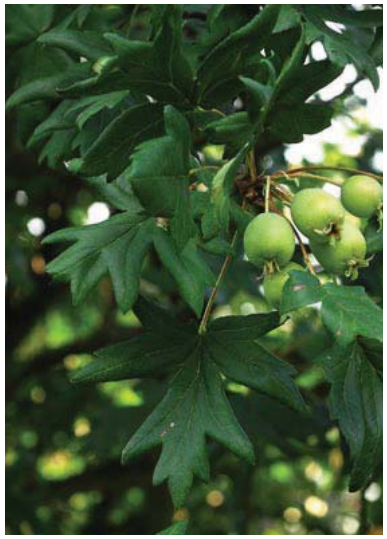
Quercus palustris (Pin Oak)

Tree Planting to Surface Car Parks and Internal Side Streets

There is a tendency for surface car parks surrounding the retail core to be devoid of any tree or other planting. First impressions of the city are often influenced by the views of these areas and the addition of tree planting could do a great deal to assist. Similarly, internal side streets within the main perimeter blocks of the city centre provide access to some smaller businesses, as well as vehicle access to service yards. The use of occasional tree planting along these side streets would help to screen less attractive boundaries, enhancing the environmental quality of these routes and encouraging greater footfall for businesses. A consistent use of species across a single car park or along a street will help to prevent a haphazard look. It is anticipated that trees along these routes would be small sized (see species table for appropriate examples).

Suitable small size tree planting to surface car parks and internal side streets

Species	Height and spread at maturity	Growing requirements	Form and features
Malus trilobata (Crab Apple)	6m height, 2.5m spread	Very tolerant of urban environments and wide range of conditions.	Small, narrow headed tree. Flowers white Maple like leaves, with strong autumn colour.
Sorbus aucuparia 'Streetwise' (Rowan cultivar)	7m height, 3m spread	Very tolerant of urban environments and wide range of conditions.	Neat upright habit. Bright orange berries in autumn.
Sorbus hupehensis (Hupeh Rowan)	8m height, 5m spread	Very tolerant of urban environments and wide range of conditions.	Small tree with bold compact canopy. Foliage blue/green and fruits are white with tinge of pink.
Sorbus x thuringiaca 'Fastigiata' (Whitebeam cultivar)	6m height, 4m spread	Very tolerant of urban environments.	Small tree, with formal 'lollipop' head. Pinnate, grey/green leaves with red berries in autumn.



Malus trilobata
(Crab Apple)

Sorbus aucuparia 'Streetwise'
(Rowan cultivar)

Sorbus hupehensis
(Hupeh Rowan)

Enhanced planting to Grosvenor Park and Other Greenspaces

Proposals for enhanced planting within Grosvenor Park are contained within the Grosvenor Park Conservation Management Plan. As well as enhancing existing planting through an appropriate management regime, new planting is proposed through the restoration and improvement of the River Terrace Garden and Quarry Garden.

In addition it is recognised that there is scope to improve planting in other greenspaces in the city centre.

Tree Pit Design and Specification

General Principles

- Trees should be planted in the ground, rather than in raised planters. Planting in the ground should ideally be in uncontained, free draining soil.

- Where contained tree pits are needed they should be as large as is feasible. For example, the use of a single tree pit linking a row of trees (in the form of a trench) is better than a series of smaller individual pits.

- Tree grilles/tree pit surfacing should be used to protect and aerate tree root systems and allow rainwater irrigation.

- Depending on the depth of the tree pit there may be archaeological implications to tree planting in certain areas of the city. The City Archaeologist must be consulted prior to any works being carried out.

The key elements of a tree pit protected by a tree grille and by tree pit surfacing are shown in the details provided in Figures 7.26, 7.27 and 7.28. The actual design and specification of tree pits will vary depending on the exact location, layout and species and all requirements should be discussed with a tree product supplier and checked with the appropriate council landscape architect and engineer before proceeding.

The key elements of each design solution will include the following.

- Tree pits should contain a suitable primary growing medium, comprising a system such as Greenleaf's RootCell system (or equal approved), which provides a load bearing structure used in conjunction with topsoil. A sand based load bearing soil, such as Greenleaf's Arbor soil/ Amsterdam tree soil (or equal approved), is only recommended for use as a secondary rooting zone underneath paved areas.

- It is imperative to the survival of any tree to incorporate a drainage layer/soakaway to prevent waterlogging.

- The tree grille/surfacing should be supported by a frame so that the surface paving is not bearing down on the tree pit soil, which might lead to compaction and potential subsidence.

- Watering of trees should be via an in-situ inlet pipe for manual watering or an automatic system. This will improve the efficiency for watering large numbers of trees during maintenance operations. The inlet pipe should be protected when not in use, using a cast aluminium lid. Automatic systems may be able to make use of water collected from surrounding drainage systems. It is important to note that irrigation pipes also assist in aerating the roots.

- Root barriers/root directors should be used as an aid to direct the spread of the root system and prevent damage to buildings, services and surfacing.

- Rather than using tree guards, it is proposed that trees be planted at a suitably robust size (semi-mature 20cm + with a 2100mm clear stem) and anchored using a below ground tensioner and anchor system. Depending upon ground conditions Deadman anchors or alternative anchor systems can be used. Individual requirements should be discussed with the tree product supplier on a site-by-site basis.

Example of tree in hard surfacing

Figure 7.26 – Tree pit detail with Greenleaf Arboresin porous tree pit surfacing (or equal approved)

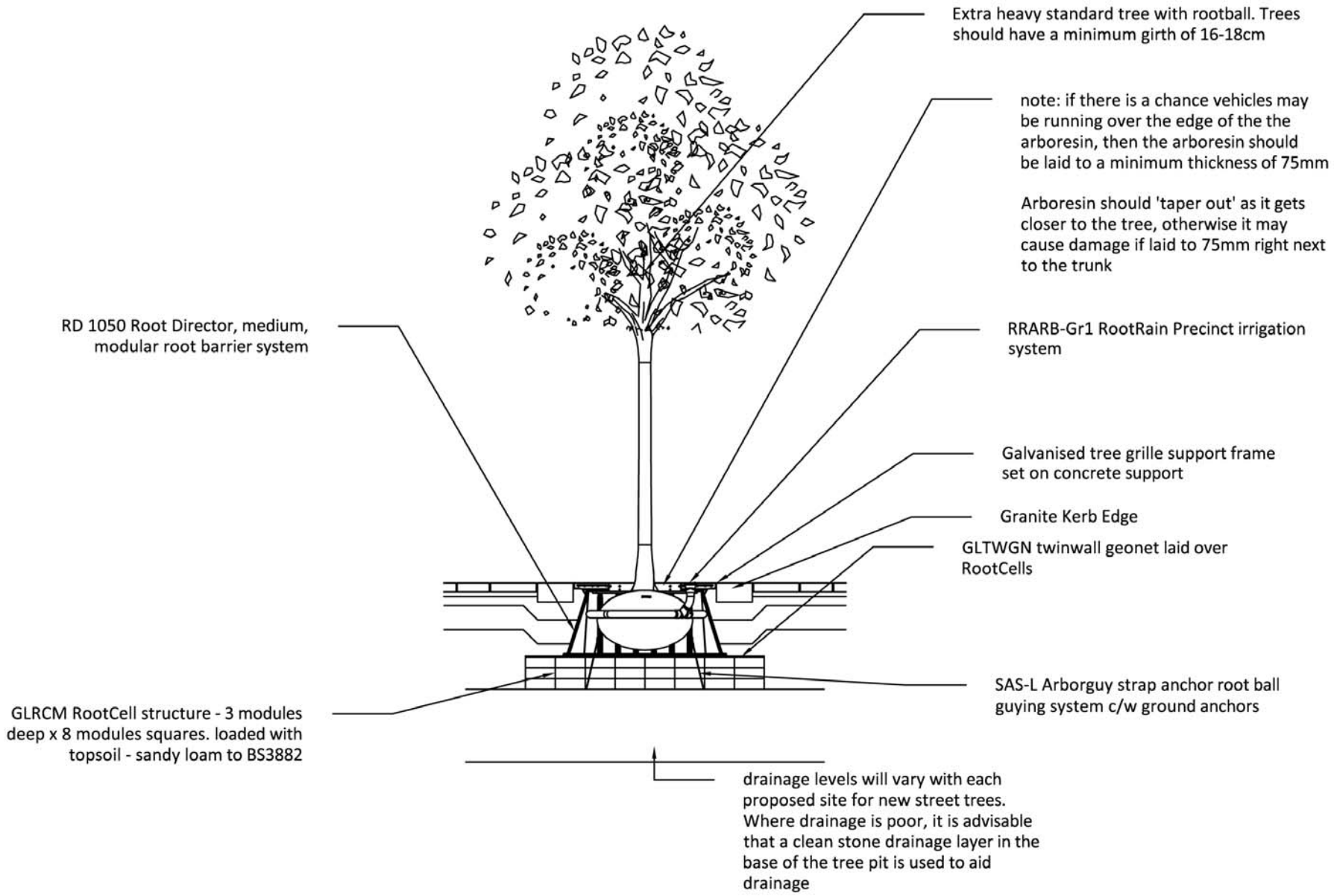


Figure 7.27 – Tree pit detail with Greenleaf Clyde Grille (or equal approved)

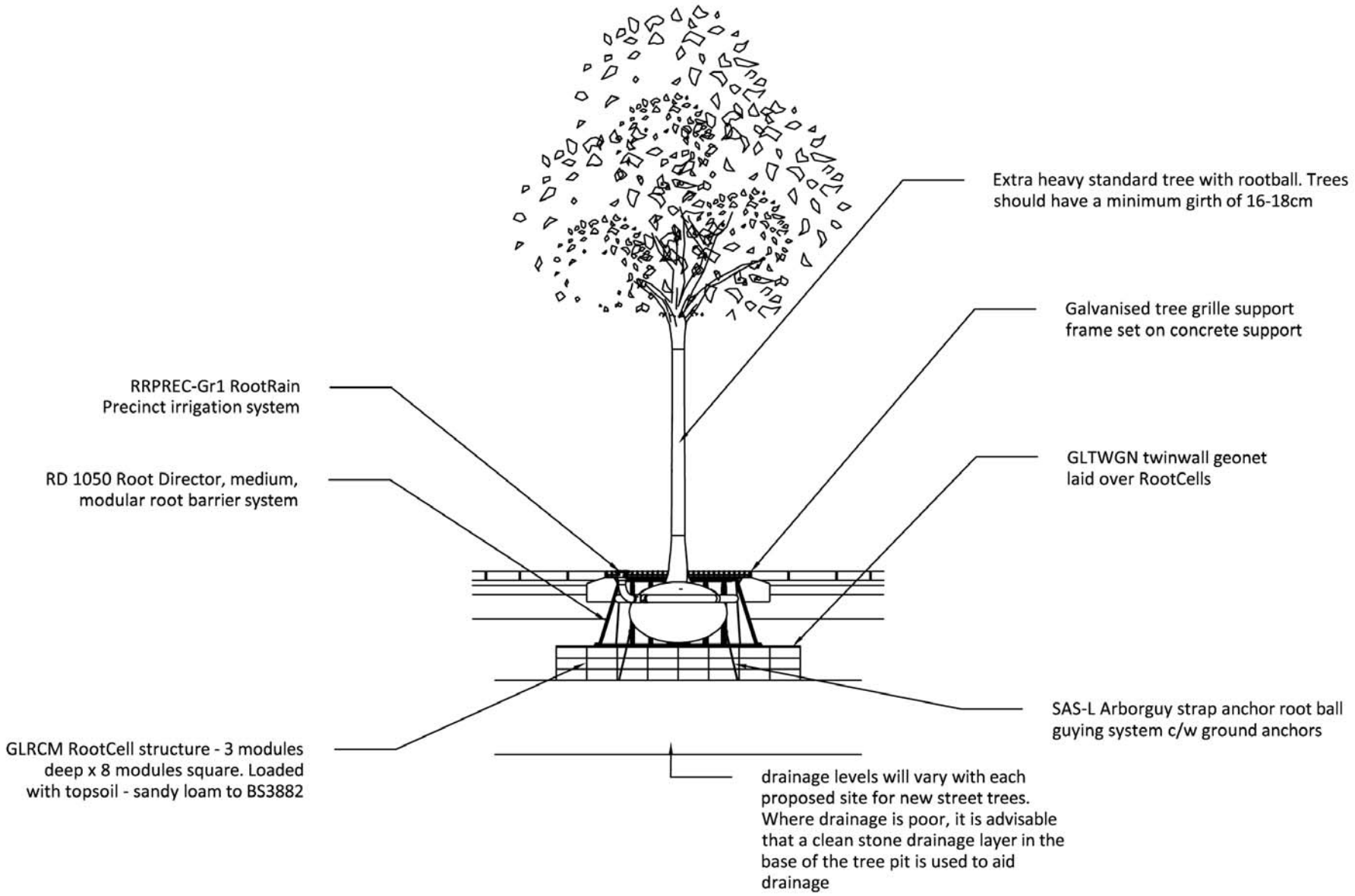
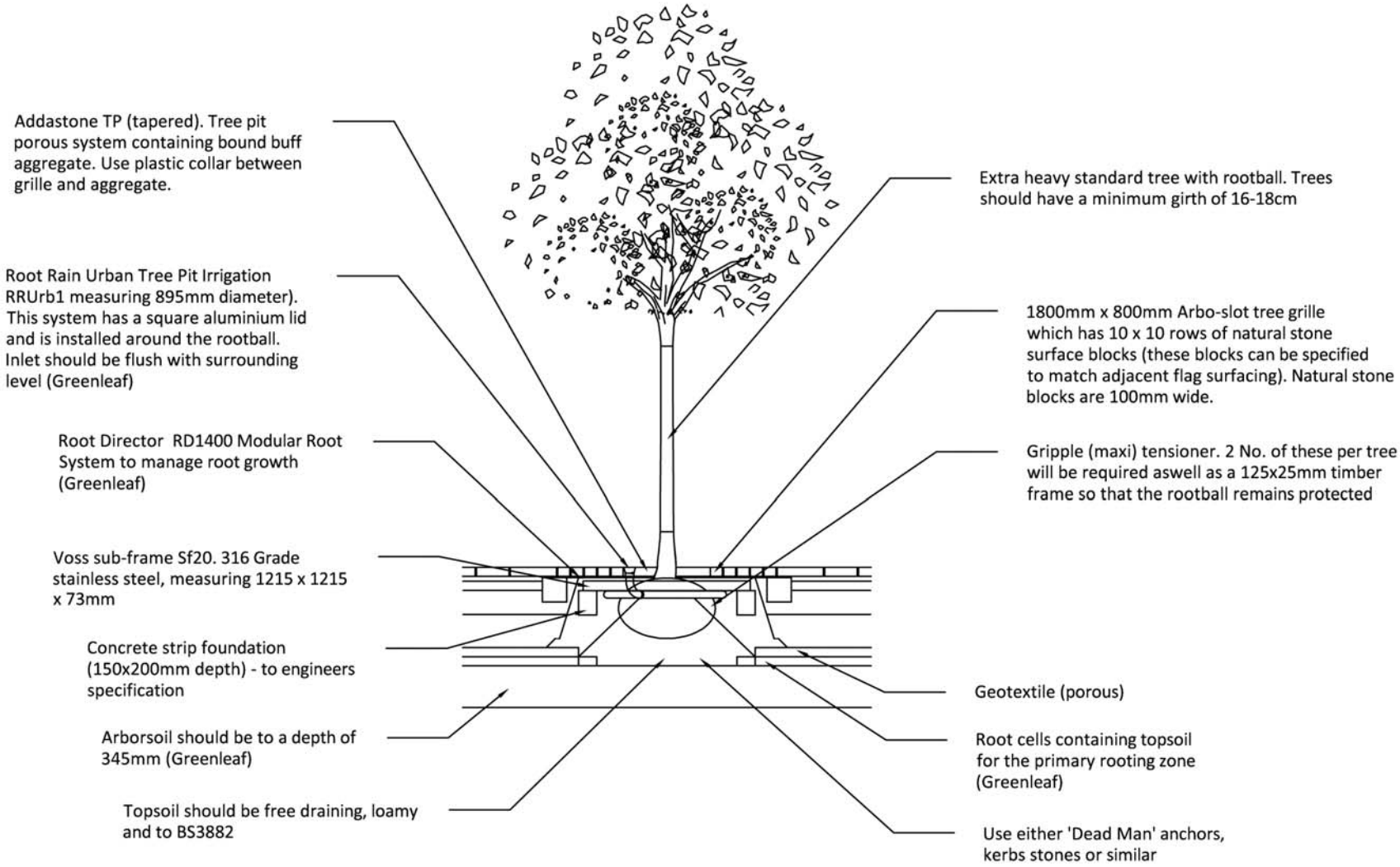


Figure 7.28 – Tree pit detail with Jones of Oswestry Arborslot Grille (or equal approved)



Ornamental Shrub and Perennial Planting

Ornamental shrub and perennial planting should be carefully incorporated into the design of the city centre public realm to maximise aesthetic benefits without generating unsustainable maintenance requirements. As previously identified, it is suggested that ornamental shrub and perennial planting would be appropriate in the following locations:

- City centre spaces and gateways;
- Streets in need of environmental improvement, but lacking space for tree planting; and
- Grosvenor Park and other greenspaces.

Siting

As described within the Section 7.3 - Street Furniture, the preferred approach should be to provide permanent raised beds/planters only as an integral part of the design of new spaces within the public realm. Planting areas should not sit flush with paving in busy pedestrian areas, but should be raised to prevent pedestrians walking across them.

From time to time high quality portable planters (see page 337) may be incorporated into schemes, where they are appropriate to the design of the scheme and where there is a perceived need for them to be moved in the future to provide access or space for an event.

Planting Design

Generally planting within the public realm should be designed using simple bold, single species blocks, selected from a limited palette, which allows for repetition of species to unify a space or define a route. The palettes of species chosen for any one planting scheme should provide year round interest, with a good proportion of evergreens creating structure during the winter months. Planting design should exploit contrasts or similarities in form, texture and colour to produce dramatic and attractive visual displays.

Species

All species selected must be suitably hardy and robust to ensure survival in the public realm. In response to concerns about climate change consideration must also be given to the ability of selected species to tolerate drought and/or waterlogged conditions. Species must be chosen for their overall decorative effect and seasonal highlights. It is essential that plant species of the right size are chosen for each particular location. Growing requirements, particularly light tolerance are an important consideration. The aim should be to design low maintenance schemes using plants that are suitable at their maximum height and will therefore not require regular pruning.

Plant Sizes and Densities

As a general rule, shrubs are much slower growing than herbaceous perennials and so in order to achieve good structure and initial impact shrubs should be specified at a minimum size of 5L. Shrub densities will vary considerably depending on the species selected and must take into account mature size to ensure that shrubs do not become overcrowded. Herbaceous perennials are quicker to establish and can therefore be planted more cost effectively using smaller pot sizes (e.g. 1 – 2L). The use of higher densities when planting herbaceous perennials (inparticular) will help with weed suppression and also take into account potential plant failures.

Plant Defects Periods

The first three years following planting are critical. The use of defects periods for implementation schemes will be essential to ensure that plant replacement occurs.

Chester in Bloom bedding display

Annual Bedding Displays

It is recommended that wherever possible, ornamental shrub and perennial planting schemes are used to decorate the public realm. Although these schemes have their own maintenance implications they represent a longer term investment and more sustainable approach to planting in comparison with annual bedding. The opportunity to combine shrub and perennial planting with annual planting highlights might also represent a less intensive, but effective approach.

Having said this, it is understood that 'Chester in Bloom' is valued by both residents and visitors and annual bedding does have a role to play in decorating some parts of the public realm and offering seasonal highlights. Last year's 'Chester in Bloom' was developed using a cycling theme, which resulted in the creation of temporary living artworks that formed 'talking points' within the public realm. The use of an annual theme should continue and themes should be chosen through consultation with the local community. It is understood that the council are hoping to encourage greater community involvement in the future.

It is understood that the RHS are keen to work with the council to identify a palette of bedding plants considered appropriate for Chester. Seasonal planting schemes should vary their colour palettes annually to sustain interest. It is suggested that generally annual bedding displays should be focused on the main routes and spaces, offering focal points within the public realm. This will heighten impact rather than spreading the planting too thinly across the city.

Page 338 provides examples of the types of temporary planters and containers that are currently and will continue to be used each year. As with other items in the public realm, temporary planters and other containers should be carefully located so as not to obstruct pedestrian flow. The use of hanging baskets fixed to existing columns will assist in minimising street clutter.

Grass areas

Grass areas can be particularly valuable as flexible seating and picnicking space during the summer months, as well as offering visual relief to hard urban environments. These should be located to respect main pedestrian desire lines. Designing raised areas for grass can prevent unnecessary wear and tear from foot traffic. Flush mowing strips should be added around trees and furniture for ease of maintenance.

Example of raised grass area