Types of Leisure facilities required

1.0 Usable Open Space

Usable open space is intended to provide outdoor space for the recreational and leisure time use of the occupants of dwelling units in a residential development and those in close proximity to the area.

1.1 Design and Location Considerations

Open space should be laid out so that it is attractive and usable by the residents. Large undefined areas should be avoided, as should pockets of badly shaped, fragmented or unusable land, which are difficult to maintain and may serve as areas for the accumulation of rubbish and locations for anti-social behaviour. The location and layout should be such as to discourage litter as far as possible, and boundaries with private open space and other adjacent areas should be designed to inhibit free passage of windblown litter to these areas.

To qualify as usable open space, an area must have a surface that is adequately drained and permits recreational or leisure time use. Such surface may include any combination of grass, plant materials, wood, or paving materials of a type designed for pedestrian or recreational use. No open space shall be considered usable if the slope of the finished grade is more that 10%. Ideally the nearest part of the area shall be not more than 92 metres walking distance from the dwelling unit it serves.

1.2 Outline Specification for Usable Open Space

With the exception of any features to be retained, grassed open space areas shall be free of rock and all hazardous objects and be developed for use by persons present on the areas for the purpose of engaging safely in recreational activity.

1.2.1 Topsoil

Topsoil shall conform to the description of topsoil set out in BS 3883: 1994, 'Specification for Topsoil'. Topsoil shall be good quality medium topspit loam, easily moulded when moist. It must be neither too sticky nor leave a smooth polished surface when smeared. It shall be free from all chemical or other pollutants without excessive proportions of stones or flints and those present must not exceed 50mm gauge. It must not include subsoil, excessive proportions of clay, sand, chalk or lime, nor may it include rubbish or other extraneous material, pernicious weeds or couch grass whether roots or top growth, or roots of trees or shrubs. A minimum depth of 150mm of topsoil is required.

1.2.2 Grading and Cultivation

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

Surface cultivation shall be carried out where appropriate and shall be as defined and described in BS 4428: 1989 'Code of Practice for General Landscape Operations', Section 4.

1.2.3 Drainage

Drainage works shall be provided where appropriate and for the reasons outlined in BS 4428: 1989 entitled 'Code of Practice for General Landscape Operations', Section 3.

Connection to existing drains or manholes shall be executed in a careful and workmanlike manner and to the satisfaction of Cork County Council.

Sand Slit Drains shall consist of a 300mm x 50mm trench. The spoil from trench excavations shall be removed simultaneously with the trenching operation. The trench shall have the profile of 225mm approx. of clean evenly sized washed pebble topped to surface levels with silica sands Grade T.

1.2.4 Seeding of Grassed Areas

Grass seeding shall be carried out in accordance with BS 4428: 1989 entitled 'Code of Practice for General Landscape Operations'. Section 5.

In the development of grass landscape areas the seed mix to be used is amenity grass mixture and certification of these mixtures are to be presented to Cork County Council. In no situation should grass seed mixture intended for high yield grass for agricultural purposes be used.

1.2.4.1 Preparation of Seed Bed

The seed bed shall be prepared in accordance with BS 4428: 1989 entitled 'Code of Practice for General Landscape Operations', Section 5.3. No seed shall be sown until the cultivation and preparatory work have been approved. Finished topsoil level shall be 25mm above adjoining paths, kerbs and manholes.

Sewing of seed strains shall be carried out during calm weather conditions with equal sowing in traverse directions at the specified rate per square metre as described in BS 4428: 1989, 'Code of Practice for General Landscape Operations'. Section 5.3.

1.2.4.2 Initial Topping Cut

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

When the grass is established from 40mm to 75mm high, according to 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.

A mowing programme should be organised that gradually reduces the height of the grass. Grass cutting machinery cutting edges should be very sharp and in good condition, to avoid pulling out young seedlings.

When cutting takes place without a box all arisings should be spread evenly to prevent damage to the growing grass beneath. This applies particularly to grass cut during periods of dull or wet weather.

1.2.5 Supply and Planting of Trees

1.2.5.1 Quality of Plants

All feathered trees and ordinary nursery stock trees shall conform to BS 393: Part 1, 1992, and all advanced nursery stock trees shall conform to BS 4043, except where otherwise specified. They shall have a strong fibrous root system with sufficient anchorage roots to give stability, a straight, self-supporting stem with at least three lateral branches, and be in condition for successful transplanting.

Bare roots shall be protected with hessian or other suitable material during delivery to site. Plants with balled roots shall be supplied with the root system, together with the original ball of soil securely wrapped with hessian, polyethylene sheeting or other suitable material during delivery to site.

Trees shall be supplied with a root ball of adequate diameter and depth appropriate to the size and species of the tree. The minimum diameter of the root ball in all cases shall be not less than 10 times the diameter of stem measured at 300mm above ground level.

1.2.5.2 Timing of Planting and Delivery to Site

Planting of field grown plants shall not be commenced before 30th September or continued after 31st March following unless authorised in writing. Planting will be suspended during periods of severe frost or when planting positions or areas are waterlogged.

No plant shall be delivered to site until the preparation of its planting position or area is practically complete. The landscape contractor will be responsible for the adequate protection of all plant material from the time of delivery from whatever source until planting has been approved. Care is to be taken to protect the foliage and roots from adverse weather conditions including heat, frost and drying winds. Where delay between delivery of plants and planting is unavoidable, the landscape contractor shall heel in bare rooted plants in a prepared trench and pack moist soil/compost around the root. In frosty weather the plants shall be given extra protection with straw or similar material. Pot grown and balled rooted plants shall be protected from exposure to direct sunlight and shall be watered as necessary to prevent drying out of the roots. All pot grown and balled root plants shall be thoroughly watered tow hours prior to the removal of the pots or wrappings. Pots, containers and other protective materials shall not be removed until immediately prior to planting.

1.2.5.3 Setting out and Planting Instructions

The landscape contractor shall carry out planting in accordance with supplied drawings. All trees shall be planted in the positions and in numbers indicated on the drawings and shall be planted in an informal manner so as to avoid a rigid matrix.

Unless otherwise agreed the ground shall be cultivated to a depth of 60mm in all shrub-planting areas.

In paved and hard surface areas, tree pits 1200mm square and at least 1200mm in depth shall be prepared by the excavation and removal from the site of surfacing material, hard-core foundation and subsoil prior to the importation of topsoil which shall conform to the description of topsoil as set out in BS 3882: 1994, 'Specification for Topsoil'.

1.2.5.4 Planting Method

Standards of workmanship and materials used for planting and staking shall be as is outlined in BS 4428: 1989, 'Code of Practice for General Landscape Operation' Section 7 – amenity tree planting, Section 8 – woodland planting, Section 9 – planting of shrubs, herbaceous plants and bulbs.

The roots of all bare root shrubs and transplants are to be treated with alginure root dip prior to planting, using a mixture of one part alginure to three parts water.

Tree stakes should be driven in to the ground off centre of the prevailing wind side of tree. The pit will be partially backfilled with a mixture of topsoil, compost and fertiliser and the tree placed in the pit to the depth of the nursery soil mark, ensuring the roots are fully spread. The remaining mixture shall be used to cover the roots and shall be distributed amongst them by shaking them with a gently up and down movement and then firming by walking.

Each tree shall be firmly secured to the stake after planting so as to prevent excessive movement or abrasion using a rubber buffer between the tree and stake. The tree shall be secured at the top of the stake about 0.6m from ground level. These ties shall allow for growth or secondary thickening of the tree stems.

On completion of planting any broken braches shall be pruned, damaged areas of bark shall be cut back to sound tissue. After planting trees, they should be watered thoroughly, with approximately 30 litres per tree.

1.2.5.5 Tree Stakes Ties and Tree Guards

Trees shall be staked using straight, well-formed Douglas Fir or Spruce poles, 1.53m in length (2.75m in length where use of tree guards is specified), driven 750mm into the ground before planting. These poles shall have all side shoots and laterals removed and shall be impregnated with copper chrome or copper chrome arsenic water borne wood preservative in accordance with I.S. 131: 1964. The poles shall be 90mm to 100mm in diameter at the heavy end and 75mm to 90mm at the light end. They shall be tapered to a point of 300mm in length at the heavy end and shall be trimmed to an angle of 45' at the light end after planting.

Tree guards shall be manufactured from 50mm x 50mm x 10 gauge weld mesh and shall be 1830mm x 920mm cylinder shape formed to 300mm diameter and are to be hot dipped galvanised, with an overall weight of .25kg/ft.

Where the use of tree guards is specified, a 2.75m length of tree stakes specified as above should be used.

1.2.6 Supply and Planting of Shrubs, Climbing Plants and Hedges

Shrubs shall be provided and planted in precise locations as agreed by Cork County Council. Shrubs shall be as is defined and described in BS 3936: 1992, 'Nursery Stock Part 1 – Specification for Trees and Shrubs'.

Standards, of workmanship and material used shall be as is described in BS 4428: 1989, 'Code of Practice for General Landscape Operations', Section 9. All shrubs shall be true to name, vigorous, well-grown specimens of their type, free from disease and insect pests. All shrubs shall be container grown in removable plastic containers unless otherwise stated. Shrubs considered to have inadequate size development at the time of planting must be replaced upon the instructions of Cork County Council.

1.2.6.1 Replacement Planting

The landscape contractor shall replace during the following planting season all plants, which fail to show growth or develop full foliage during the first growing season after planting. All such replacement planting shall be at the landscape contractor's expense, who shall also be responsible for any preparatory and other work necessary to be carried out correctly, including the removal and disposal of dead plant material.

1.2.6.2 Grass Maintenance on Reseeded Areas

The Developers shall carry out the following operations – stone picking down to 25mm, weed elimination, cutting, repair of all erosion and settlement, filling of all holes to ensure uniform grading throughout and reseeding as necessary to establish a uniform a uniform and healthy stand of the specified grasses.

2.0 Play Areas

Play has an important role in the development of young children. It is fun, promotes development, helps to keep them healthy, fosters social interaction and inclusion, and helps them to find out about themselves. Therefore it is vital that adequate facilities be provided.

Play spaces should be safely accessible and available to the general public. A range of facilities should be available and the environment should be designed to provide focused opportunities for outdoor play.

Depending on the size of the development the following should be provided:

2.1 Neighbourhood play area
2.2 Local play area
2.3 District play area.

2.0.1 General Design and Construction Considerations

Before a play area is to be placed on a site a number of factors need to be looked at from a child's perspective, such as gradient of footpaths, size of steps, height of handrails and visual obstructions encountered on route to the play area

Placing a play area in close proximity to the roadway will have the advantage of providing surveillance, however traffic calming measures should be put in place on these roadways. The play area and access paths should be free from obstructions, fences, walls and shrubs, so that a child rushing to the area is clearly visible to the driver within the safe stopping distance of the approaching car.

Generally childrens' play areas should be:

1. accessible within a specified walking time
2. accessible without having to cross main roads, railways or waterways
3. sited in open, welcoming locations
4. separate from major vehicle movement and directly accessible from pedestrian routes
5. sited on land suitable for the type of play opportunity intended
6. placed to reduce likelihood of noise and disturbance to dwellings
7. integrated, as far as possible, with other open spaces and areas of amenity planting to provide appropriate separation from nearby dwellings
8. overlooked for dwellings or pedestrian routes that are well used
9. accessible by footpaths. Footpaths not to pass through the play area
10. surfaced to withstand the intensity of use, hard surfaces not grass
11. provided with seating for parents and carers
12. where fitted with play equipment the equipment shall comply with manufacturers specifications and include impact absorbing surfaces beneath and around all play equipment and be certified by RoSPA, the Royal Society for the Prevention of Accidents.
13. appropriate features installed on the perimeter of the activity zone to exclude dogs
14. have vehicular access for maintenance purposes

Avoid locating a play area:

- Where steep gradients lead to and away from the area, especially at personnel and maintenance vehicle access points.
- Where there is poor access to the facility for people with disabilities
- In very exposed terrain
- Where it is not possible for access roads/footpaths and maintenance routes to reach the main personnel/maintenance gates
- Where incoming services (electricity feed cables and water/drainage) will be prohibitively expensive to install
- Where emergency vehicles cannot readily get to the facility
- Where users have to traverse naturally turfed areas (mud, debris and contaminants all lead to the rapid deterioration of the playing surface)
- Too close to unstable ground (landslides) or drainage outfalls (back falling or ponding on the play area due to blocked drains)
- Too close to deciduous (leaf drop in autumn) or leaf sap forming trees.

Play Area Zones

Play areas have two zones: the Activity zone and the buffer zone.

An **Activity Zone** is an area of land specifically dedicated for children to use for play. It may or may not include play equipment.

A **Buffer Zone** is the space surrounding an activity zone the purpose of which is to provide a reasonable degree of separation between play activity and nearby residential properties.

Children With Special Needs

Children with physical disabilities and learning difficulties should be able to access any outdoor play area. The access points to all play areas should be designed keeping in mind wheelchairs only form a small percentage of children with disabilities. Play areas shall be designed and constructed taking account of children with other disabilities such as visual or hearing impairment, taking account of the safety factors associated with the nature of those disabilities to ensure that they do not come to any harm.

2.0.2 Drainage

The drainage system used for the play areas should

- Ensure that all surface water is removed from the play area at a rate which will safeguard against surface flooding occurring
- Not allow excess water remain present in the construction which might result in a reduction of the load bearing capacity of the formation or in any frost damage to the construction
- Protect the installation from the effect of ground or surface water from the surrounding areas.

Depending on the site conditions and size of the play area a perimeter drain that is laid around one or more sides of the facility will be sufficient.

Interceptor drains, which may also act as collector drains, should be installed at the toe of any embankments, thus preventing run-off from surrounding area.

Where perimeter/ collector drains change direction an inspection chamber should be installed. To allow for ease of access for maintenance rodding eyes should be included at the head of collector drain runs.

2.0.3 Landscaping

The use of trees, planting and other natural features can add to the play areas providing a welcome space for children and carers. Every play area will be unique and the design and landscaping should reflect the characteristics of the surrounding area. Planting can be used to give spaces different characteristics creating an event play area.

When choosing planting, consideration should be given to a variety of species that will ensure foliage and bloom throughout the year. The use of fragrance plants, such as rosemary or lavender, can add to the atmosphere of the area and should be considered for use, particularly next to the seating area.

Shrubs with thorns will deter vandalism but should be placed away from pathways and equipment where they won't cause injury. Planting should allow clear vision into the play area allowing surveillance from the surrounding houses, and be of a significant width to prevent short cuts from taking place through it. Trees and shrubs should be placed so as not to interfere with public lighting or impede the vision of those entering or exiting the play space.

For maintenance purposes plants that require regular clipping should not be considered for use.

Planting beds should be of a significant width to encourage survival. Generally beds of less than 1.5m in width rarely survive. The same can be seen for thin strips of grass which are difficult to maintain.

A problem that can be commonly found in play areas is that of litter. Thorny ground cover species, e.g. roses, should not be used as they deter the removal of litter.

2.0.4 Fencing

Fencing used for play areas highlights the site boundary, encloses and defines the extent of the safe space as well as providing a barrier against dogs.

Fencing should:

- enclose the areas for general games and play
- enable the site and its users to be visible for informal supervision
- never contain barbed or razor wire or other sharp hazards.

Depending on the play area fencing should be

- at least 600mm in height, for neighbourhood play areas, around the perimeter, with a self-closing pedestrian gate to prevent access by dogs

- at least 1m in height, for local play areas and district play areas, around the perimeter of the activity zone, with two outward-opening, self-closing pedestrian gates, on opposite sides of the play area, to deter entry by dogs and to restrict opportunities for bullying

All fencing should consist of vertical barriers with open style infill.

2.0.5 Gates

Ideally two access points must be provided where play areas are fenced off.
Pedestrian gates should:

- be self closing
- open outwards (openings may need to be realigned to avoid conflict with existing pathways)
- be 1.2m wide
- have a sufficient clearance between the stile and gatepost to prevent entrapment injuries to hands and fingers
- be of robust construction to withstand children swinging on them.

Vehicle access gates should also be provided and should be locked when not in use.

2.0.6 Dog Grids

Dog grids have been used as an alternative to gates, however self–closing gates are preferred. Where dog grids are used the following conditions should be adhered to:

- they should run at right angles to the direction of travel to reduce any inconvenience to prams and wheelchairs
- there should be no accessible edge at the sides over which dogs will be able to navigate
- they should be kept clear of litter accumulating beneath them

In sites where bikes are ridden in to the play area dog grids may not be the best possible solution.

2.0.7 Facilities

Seating should be provided for carers.
Bins should be provided at play areas especially adjacent to seating areas.
Speed restricting barrier should be placed in the entrance to the play area space to prevent children entering and leaving the play area at high speeds.

2.1 Neighbourhood Play Areas

This is a small area of open space for young children to play close to home in locations overseen by parents. It should be designed to encourage informal play and social interaction. Seating should be provided for parents or carers to enable supervision, however it is important that these are not used by older children or unrelated adults. Traditional bench seating should be avoided. Older children could generate noise and disturbance transforming the play area from a valued amenity to a nuisance.

Characteristic of a Neighbourhood Play Area

- has a minimum activity zone area of $100m^2$
- caters for children up to 6 years.
- ideally is within 1 minute's walking time from home, (60m straight line distance).
- ideally has a buffer zone of 5m minimum depth between the activity zone and the nearest dwelling that faces the play area. This should include planting to enable children to experience natural scent, colour and texture
- is over looked by nearby houses
- gable ends or other exposed walls should be protected from use for ball games by, for example, providing a strip of dense planting of 1m minimum depth
- positioned beside a pathway on a route that is well used
- occupies a reasonably flat, well-drained site with grass or a hard surface
- contains features that enable children to identify the space as their own domain, e.g. low key games such as hopscotch, a footprint trail, mushroom style seating etc.
- play area equipment should conform to EN 1176 and all relevant standards
- some individual seats are provided for parents and/or carers
- has fencing of at least 600mm in height around the perimeter, with a self-closing pedestrian gate to prevent access by dogs
- has a barrier to limit the speed of a child entering or leaving the facility
- has a sign indicating:
    - the area is solely for use by children;
    - adults are not allowed unless accompanied by children:
    - dogs are excluded

2.2 Local Play Areas

A local play area is a piece of open space designed for children of early school age. As children begin school, their play activities occur more frequently in a group, therefore there is a need to provide children with a safe environment in which they are able to experience activities and other stimuli. Where properly sited, overseen and maintained a Local Play Area is to meet these needs without being a source of nuisance to other residents.

Characteristics of a Local Play Area

- has a minimum activity zone area of $400m^2$
- caters for children from 4 to 8 years of age
- is within 5 minute's walking time from home, (240m straight line distance).
- ideally has a buffer zone of 10m in depth between the edge of the activity zone and the boundary of the nearest dwelling. This zone should include planting to enable children to experience natural scent, colour and texture
- positioned beside a pathway on a well used route
- occupies a well-drained site with a hard surface
- contains seating for parents and/or carers
- contains a litter bin
- has fencing of at least 1m in height around the perimeter of the activity zone, with two outward-opening, self-closing pedestrian gates, on opposite sides of the play area, to deter entry by dogs and to restrict opportunities for bullying

- has a barrier to limit the speed of a child entering or leaving the facility
- has a sign indicating:
  - the area is solely for use by children;
  - adults are not allowed unless accompanied by children:
  - dogs are excluded

2.3 District Play Areas

A district play area is a site designed with older children in mind but also has opportunities for play for younger children. Older children require a greater number and a wider range of stimuli. Initially, they engage in wheeled activities and informal ball games. A District Play Area may be divided into two areas, one of which for wheeled and ball play. Where properly sited, a District Play Area may also include a ball games wall, ie a wall to kick or hit balls against.

Characteristics of a District Play Area

- has an activity zone area of not greater than 1000m^2, which may be divided into two parts; one for general play and the other for ball and wheeled play.
- caters predominantly for older children
- is within 15 minute's walking time from home, (600m straight line distance).
- ideally has a buffer zone of not less than 20m in depth between the activity zone and the boundary of the nearest dwelling. This zone should include planting to enable children to experience natural scent, colour and texture
- positioned beside a pedestrian pathway on a well used route
- occupies a well-drained site with hard surfaced areas
- contains seating for parents and/or carers in the vicinity of the play area and other seating in within the play area.
- contains a litter bin at each access point and in the area of each group of seats
- has a convenient and secure parking facility for bicycles
- has fencing of at least 1m in height around the perimeter of the activity zone, with two outward-opening, self-closing pedestrian gates, on opposite sides of the space, to deter entry by dogs and to restrict opportunities for bullying
- has a barrier to limit the speed of a child entering or leaving the facility
- has a sign indicating:
  - the area is solely for use by children;
  - adults are not allowed unless accompanied by children:
  - dogs are excluded

2.4 Outline Specification For Play Areas

2.4.1 Excavations

Excavate over site to remove topsoil to an average 300mm deep; deposit on site in temporary spoil heap.

2.4.2 Groundworks

Establish 1:100 fall to formation in a single plane.
Compact Formation Layer.
Place Geotextile material.

The finished level of the play area should be levelled and compacted with a finished elevation 100mm – 150mm above the surrounding ground, allowing for water runoff and vegetation control around the perimeter.

Thickness of Sub-Bases

- minimum 150mm compacted depth of non-frost-susceptible, free draining aggregate.

- 40mm compacted base course of 10mm, 14mm or 20mm open graded macadam.

- 25mm open grade porous macadam wearing course consisting of 6mm diameter aggregate.

2.4.2.1 Herbicide

Apply an approved herbicide in accordance with manufacture's recommendations to subgrade of paved areas.

2.4.2.2 Compaction of Subgrade

Defer final excavation to formation level until immediately before compaction of subgrade.
Soft spots must be excavated and refilled with subgrade material, compacted as necessary to provide bearing equivalent to the surrounding material.
Subgrade must be relatively dry at time of compaction.
Where local excavation and backfilling has taken place make additional passes of the roller.

Immediately before placing sub-base thoroughly compact the sub-grade with a roller weighing not less than 2.5 tonnes or equivalent other plant.

2.4.2.3 Granular Material

Free from harmful matter, well graded, passing a 75mm BS sieve and in any one layer of crushed hard rock.
Must be non-frost susceptible (heaving not more that 13mm after 10 days). Test if required.

Placing Granular Material Generally:
Ensure that subgrade is free from loose soil, rubbish and standing water.
Take all necessary precautions to ensure stability of adjacent structures. Place and compact material against or over structures, membranes or buried services in a sequence and manner, which will ensure stability and avoid damage.

Granular Sub-Base / General
Spread and level and, as soon as possible thereafter, compact with a roller weighing not less than 2.5 tonnes or other equivalent plant.

Protection
Cover sub-base as soon as practicable with subsequent layers.
Prevent damage to subgrade and sub-base from construction traffic, construction operations and inclement weather.

2.4.2.4 Base Course

Rolled asphalt paving to Play Area

Lay and compact bituminous materials to BS 594: Part 2 and BS 4987:Part 2 as relevant

Wearing course: Thickness 25mm

Material: Open grade porous macadam consisting of 6mm diameter aggregate.

Basecourse: Thickness 40mm.

Material: 10mm, 14mm or 20mm open graded macadam.

2.4.3 Preparatory Work/Requirements

2.4.3.1 Materials Generally

At the time of delivery a test certificate should be submitted for each manufacturing batch of bituminous material, certifying compliance with this specification and the relevant British Standard and giving complete information on the completion of each mix.

2.4.3.2 Samples

Before placing orders submit representative samples of uncoated chippings as Clause 360. Ensure that delivered materials match samples.

2.4.4 Drainage

Install perimeter carrier drain to one or all sides of the play area, consisting of u.PVC corrugated land drainage pipe to a depth of approximately 300mm, with backfill and surround with 200mm clean cut stone or gravel to formation level.

The type of drainage and depth of gravel will depend on the ground conditions specific to the site in question.

2.4.5 Kerbing

Supply and lay 150 x 50 p.c.c. kerb edging on concrete foundations, haunched on both sides.

2.4.6 Landscaping

For maintenance purposes plants that require regular clipping should not be considered for use.

Planting beds should be of a significant width to encourage survival. Generally beds of less than 1.5m in width rarely survive. The same can be seen for thin strips of grass that are difficult to maintain.

A problem that can be commonly found in play areas is that of litter. Thorny ground cover species, e.g. roses, should not be used as they deter the removal of litter.

2.4.7 Fencing

Depending on the play area fencing should be at least 600mm in height, for neighbourhood play areas, around the perimeter, with a self-closing pedestrian gate to prevent access by dogs

at least 1m in height, for local play areas and district play areas, around the perimeter of the activity zone, with two outward-opening, self-closing pedestrian gates, on opposite sides of the play area, to deter entry by dogs and to restrict opportunities for bullying

All fencing should be vertical barriers with open style infill.

2.4.8 Gates

Supply and fit 2 no. access points to fence off play area.
Gates should be a minimum of 1.2m wide
Vehicle access gates, 3m wide, should also be provided and should be locked when not in use.

3.0 Grassed Sport Pitch

Grassed sport pitches are required on a pro-rata basis of 1 full pitch per 350 houses. Pitch Dimension: the pitch is to be 108 metres by 74 metres, included in this is a 4 metre run-off area behind the goal lines and 3m wide run-off area along the side touch lines.

3.1 Design and Construction Considerations

In order to provide satisfactory playing conditions throughout the year a designed drainage system needs to be put in place.

Gradients

To facilitate drainage it is desirable for a playing pitch to have a slope of between 1:60 and 1:80. The main fall should be across the pitch rather in the direction of play, The playing surface should be no steeper than 1:80 along the line of play and no steeper than 1:50 across the line of play.

Dimensions

The dimensions of the field of play shall be

Length: 100m

Width: 68m

Safety margins should be taken in to account when determining the position of the pitch on site. Safety margins should be 4m wide behind the goal line and 3m wide along the side touch line. Any obstructions within these widths should be padded.

Orientation of Sports Pitches

Where possible, when the sun is low within the sky the direction of play should not be directly into it for either team. In this respect facilities should be oriented in a general north south direction.

Good locations for Grassed Sports Pitches include:

- Those close to car parks and support facilities
- Those where there are good sound absorbing/spectator terracing and banking possibilities e.g. the facility sits in a natural amphitheatre-where it is possible to view activities from on high and where the facility will be sheltered by the surrounding terrain
- Those where there is good access to the facility for people with disabilities.

Avoid locating a grassed sports pitch:

- Where there is poor access to the facility for people with disabilities
- In very exposed terrain
- Where it is not possible for access roads/footpaths and maintenance routes to reach the main personnel/maintenance gates
- Where incoming services (electricity feed cables and water/drainage) will be prohibitively expensive to install
- Where too many site perimeter and internal security/access gates have to be passed, meaning gates keep having to be locked and unlocked

- Where emergency vehicles cannot readily get to the facility
- Where users have to traverse naturally turfed areas (mud, debris and contaminants all lead to the rapid deterioration of the playing surface)
- Too close to unstable ground (landslides) or drainage outfalls (back falling or ponding on the sports pitch due to blocked drains)
- Too close to deciduous (leaf drop in autumn) or leaf sap forming trees
- Where non-sport users may be passing and be at risk of injury, through unauthorised entry or access etc.

3.2 Drainage

The drainage system used for the grassed sports pitches should

- Ensure that all surface water is removed from the sports pitch at a rate which will safeguard against surface flooding occurring
- Not allow excess water remain present in the construction which might result in a reduction of the load bearing capacity of the formation or in any frost damage to the construction
- Protect the installation from the effect of ground or surface water from the surrounding areas.

Depending on the site conditions and size of the pitch a perimeter drain that is laid around one or more sides of the facility will be sufficient.

3.3 Tree Roots

If possible, no trees should exist within 3m of the pitch. Trees, hedges and shrubs to be planted close to the pitch should be chosen carefully to avoid any aggressive root systems. Roots can be a threat to the facility itself by distorting or cracking the surface. This is especially the case for strong-rooted varieties such as poplar, willow and sycamore. If their use is essential, the insertion of a root barrier between the trees and the court is strongly recommended. Planning or conservation consent should be sought where necessary.

3.4 Fencing

Fencing should be placed around the sports pitch, ideally at a height of at least 2.4m, so as to meet the following requirements;

- Retain balls in the playing area
- Allow spectators to view the game safely
- Provide security for the playing area
- Keep animals out

Chainlink fencing is preferred.

Where pitches are located close to buildings or site boundary fences, the height of the security fence should be increased for the length of the penalty area. An end clearance of between 12-15m may be required where pitches are located near to buildings, boundaries, roads or other fixtures.

Gates should;

- be 1.2m wide for pedestrians
- be 3m wide double gates for vehicular access

- have removable lintel panels provided for above the gate to allow for ease of access with soccer goals
- be infilled with chainlink fencing / rebound boards / kick boards as appropriate
- be provided with a suitable locking mechanism
- be positioned so as not to create tight gathering or milling points

All gates thresholds should be level or slightly ramped but not stepped.

3.5 Fixtures and Fittings

Waste bins should also be provided adjacent to the pitch.

Goal posts and Crossbars

- Goal posts and crossbars must be made of metal and other approved material. They must be either square, rectangular, round, half round, or elliptical in shape and white in colour.
- Goals must be placed on the centre of each goal line.
- The distance between the posts is 7.32m and the distance from the lower edge of the crossbar to the ground is 2.44m.

Both goalposts and the crossbar have the same width and depth, which do not exceed 12cm. The goal lines are the same width as that of the goalposts and the crossbar. Nets may be attached to the goals and the ground behind the goal, provided that they do not interfere with the goalkeeper. Net supports and fixings must not protrude in any way likely to cause injury to a player colliding with the goal unit.
The goalposts and crossbars must be white.

Safety
Goals must be anchored securely to the ground. Portable goals may only be used if they satisfy this requirement.

3.6 Outline Construction Methods/Specification For Grassed Sports Pitches

3.6.1 Setting Out of Pitches.

It is the responsibility of the Contractor to set out each pitch as required. Once each pitch is set out it's final position is to be agreed with the Engineer.

All drainage pipe work and inspection chambers are to be set out by the Contractor, their positions and specifications are to be agreed with the Council. All pipe work is to be inspected and approved prior to back filling.

A set of as-built drawings is to be prepared by the Contractor, which will indicate

-The as-built position of each pitch.
-The as-built position of all inspection chambers.
-The as-build positions of water/irrigation pipes and valve boxes.

3.6.2 Pitch Construction Procedure

The top/sub-soil previously deposited on site will be graded to provide a fall of between 1:60and 1:80. The main fall should be across the pitch rather in the

direction of play, The playing surface should be no steeper than 1:80 along the line of play and no steeper than 1:50 across the line of play.

All stones and boulders greater than 110mm in diameter are to be gathered and removed from the site.

Subsequent to grading and rock removal the entire area is to be ripped under dry conditions. Ripping is to be carried out using a tracked dozer no larger than a D6 or equivalent. The dozer is to be fitted with shanks. Depth of ripping 300mm at 450mm spacings.

Using lightweight mini diggers and LGP dumpers, excavate lateral drains across each pitch and surrounds. Spacing between lateral drains to be 7.7m. Depth of lateral drains to be 450mm. Width of lateral drains to be 250mm. Insert an 80mm perforated pipe and bring to 75mm of surface with 10-12mm pea stone and to surface with specified sand.

Insert ends of lateral drain into collector drains via proprietary fittings.

Excavate collector drains between pitches. Excavate to a depth of 550mm and to a width of 400mm. Insert a 160mm perforated pipe and bring to within 100mm of surface with 25mm round stone and bring to surface with 10-12mm pea stone.

Excavate large collector drains. Excavate to ensure a minimum fall of 1:150, using 225mm double wall pipes.

Join collector drains into large collector drain via sleeves.

Excavate for and fit inspection chambers, agreement of the locations to be agreed with the Council.

Allow for large manhole to connect end of large collector drain into existing storm sewer.

Subsequent to setting in lateral drains, grade the pitch surfaces and surrounds using a laser controlled grading blade.

Lightly cultivate the surface and aerate between lateral drains using a Groundbreaker or equivalent, fitted with 250mrn deep blades.

3.7.1 Finishing Pitches.

Using a Shelton or *AFT* whiz wheel or equivalent excavate slit drains to a depth of 250mm and to a width of 50mm. Spacing between slits to be 1m. Fill to 50mm of

surface with 3-5mm grit. Compact and bring to surface with specified sand. (Specification as per Sand Carpet.)

Using professional topdressing equipment, apply a finished 100mm layer of specified sand plus peat mix (85/15) to the surface of the pitch.

Sand Specification.

Sand used for the construction of the sand carpet must comply with the following particle size distribution range.

- Not more than 10% of particles to be between 1 and 2mm

- A minimum of 50% of particles to be between 0.25 and 1mm

- Not more than 25% of particles to be between 0.15 and 0.25mm

- Not more than 10% of particles to be between 0.05 and 0.15mm

- Silt and clay content to be no greater than 10%

Grade sand surface using a laser controlled grading blade.

Stabilise sand surface using a Sand Pro with a drag mat attached or equivalent.

Cultivate all areas around pitches, removing stones greater than 25mm.

Fertilise pitch surfaces using

-Vitax Pre Seeder 7.13.9 or equivalent @ 50grams/m2.

Plus

-Vitax 5.2.2 or equivalent @ 50grams/m2.

Using a single pass precision seeder sow the following seed mix @ 45grams/m2.

-35% Dwarf Perennial Ryegrass -Bellevue.

-30% Dwarf Perennial Ryegrass- Roadrunner.

-10% Strong Creeping Red Fescue -Hollywood.

-15% Chewings Fescue -Calliope.

-10% Smooth Stalked Meadow Grass -Limousine.

3.7.2 Aftercare

3.7.2.1 Cutting of Pitches.

Initial cut as soon as pitch and surrounds reach 75mm high. Cut at a height of 50mm. Collect all clippings.

Repeat cutting and collection of clippings for a period of 18 months from the end of construction, cutting at 37.5mm.

Number of Cuts 35.

3.7.2.2 Cutting of Surrounds.

Cut at 50mm.

Number of Cuts 25.

3.7.2.3 Fertilising Pitches.

Apply Vitax Marathon or equivalent 16.4.8 @ 35kg/m^2.
Applications 5.

Apply Vitax Marathon or equivalent 7.10.14 @ 35kg per pitch
Applications 4.

3.7.2.4 Top Dressing Pitches.

Allow for topdressing pitches using a Professional topdressing machine. Apply 70,000kg/pitch per application. Sand specification as per construction. Brush sand into surface. Each pitch to be topdressed twice during grow-in.

3.7.2.5 Spread Limestone

Allow for the supply and spread of ground limestone @ 10,000kg per pitch.

One application is required.

3.7.2.6 Control of Broadleaved Weeds on the Pitch and Surrounds.

It is envisaged that because of the installation of the sand carpet the germination of broadleaved weeds will be restricted. However at or after twelve months of the grow-in broadleaved weeds must be controlled using a product such as Supertox 30 @ 5 litres per 7,000m^2 or Headland Relay @ 4 litres per 10,000m^2. One application will be necessary.

3.7.3 Fencing

Chain link fencing to perimeter of grassed sports pitch.

- Chain link to have green plastic coating.
- All posts to be set in 20N concrete, 450mm x 450mm x 600mm deep.
- All post to be galvanised.

- On low level fencing no ends of mesh or wire shall cause hazards to players, particular children.
- All steel to be powder coated green.

Fixings

No protruding fence fixings are allowed.
Fixing bolts to be assembled with heads inside and bolts trimmed to within 6mm of the nut.
Trimmed ends should be burred and treated or shear head nuts used.

Gates and Entrances

Single gates to be a minimum of 1.2m wide.
Double gates should be 3m wide to allow for access of vehicles and maintenance.
Gates to be hung plumb, level and secure
Gate lathes shall include provision for padlocks.
Dog or anti-contamination grids should be places at all entrances.
All steel to be powder coated green.

4.0 One court Multi-Use Games Area (MUGA)

A MUGA, by definition, is used for more than one sport and the performance of the facility has to satisfy the often conflicting demands of the various sports.

The MUGA can be used for five-a-side football, basketball and general sports and recreational training and play.

The MUGA should be 28m by 21 m minimum allowing the area to cater for a variety of sports. This size allows for a full-size basketball court and a reduced 5-a-side soccer pitch.

4.1 Design and Construction Considerations.

Site Considertions and Location

Levels
The playing surface should have a gradient of 1 in 100 across the direction of play.

Orientation of MUGA
Where possible, when the sun is low in the sky, the direction of play should not be directly into it for either team. In this respect facilities should be oriented in a general north- south direction. It has been suggested by the UK Sports Council that, insofar as is possible, the best common angle for the axis of the MUGA is at 345°, and in any case, between 325° and 20° (taking angles clockwise from true north).

Locations
The location of the MUGA should be sympathetic to its surroundings and any adjacent infrastructure. It is advisable to locate a MUGA (especially floodlit ones) at least 12m, and ideally 30m from residences. On flat terrain sites, landscaping and mounding can be used to alleviate noise and floodlight spillage.

Good locations for MUGAs include:

- Those close to car parks and support facilities
- Those where there are good sound absorbing/spectator terracing and banking possibilities e.g. the facility sits in a natural amphitheatre-where it is possible to view activities from on high and where the facility will be sheltered by the surrounding terrain
- Those where there is good access to the facility for people with disabilities.

Locations to avoid locating a MUGA:

- Where there is poor access to the facility for people with disabilities
- In very exposed terrain
- Where it is not possible for access roads/footpaths and maintenance routes to reach the main personnel/maintenance gates
- Where incoming services (electricity feed cables and water/drainage) will be prohibitively expensive to install
- Where too many site perimeter and internal security/access gates have to be passed, meaning gates keep having to be locked and unlocked
- Where emergency vehicles cannot readily get to the facility

- Where users have to traverse naturally turfed areas (mud, debris and contaminants all lead to the rapid deterioration of the playing surface)
- Too close to unstable ground (landslides) or drainage outfalls (back falling or ponding on the MUGA due to blocked drains)
- Too close to deciduous (leaf drop in autumn) or leaf sap forming trees
- Where non-sport users may be passing and be at risk of injury, through unauthorised entry or access etc.

Infrastructure

The location should ensure MUGA is readily accessible. Access roads etc need to be wide enough to be used by visitors, maintenance and emergency vehicles (including equipment attached to a tow bar or on the back of a trailer etc). Footpaths should be wide enough to ensure wheelchair users can access the facility. Dropped kerbs at crossing points and general access for disabled infrastructure should be compliant with disability requirements.

When sand filled or sand dressed surfaces are used it is advisable to install at all ingress/egress points drained catchment pits and gratings, complete with barrier matting. Certain designs of catchment pits and grills will also double as animal deterrents, especially if pits are wide enough to prevent them being jumped over and the gates are self-closing.

Tree Roots

If possible, no trees should exist within 3m of the court area. Trees, hedges and shrubs to be planted close to the court should be chosen carefully to avoid any aggressive root systems. Roots can be a threat to the facility itself by distorting or cracking the surface. This is especially the case for strong-rooted varieties such as poplar, willow and sycamore. If their use is essential, the insertion of a root barrier between the trees and the court is strongly recommended. Planning or conservation consent should be sought where necessary.

While such measures will inhibit root incursion, the only certain preventative measure is repositioning the MUGA, generally to a distance equivalent at least to the potential height of the tree and its potential canopy width.

Overhanging Branches

Branches of trees, which overhang the MUGA invariably cause problems. Water dripping from the branches may cause slippery or discoloured patches, encouraging the growth of algae or moss and sometimes even erode the surface. Leaf sap, insect secretions and bird droppings are also problems, which may be associated with branched overhanging games areas. It is strongly recommended that that overhanging branches be pruned back or the MUGA should be moved or the trees removed.

4.2 Drainage

The drainage system used for the MUGA should

- Ensure that all surface water is removed from the MUGA at a rate which will safeguard against surface flooding occurring
- Not allow excess water remain present in the construction which might result in a reduction of the load bearing capacity of the formation or in any frost damage to the construction

- Protect the installation from the effect of ground or surface water from the surrounding areas.

Depending on the site conditions and size of the MUGA a perimeter drain that is laid around one or more sides of the facility will be sufficient. Interceptor drains, which may also act as collector drains, should be installed at the toe of any embankments, thus preventing run-off from surrounding area.

Where perimeter/ collector drains change direction an inspection chamber should be installed. To allow for ease of access for maintenance rodding eyes should be included at the head of collector drain runs.

4.3 Perimeter Edgings

Edgings should be designed and installed between playing surfaces and the surrounding margin to facilitate maintenance of the playing surface and surrounding areas. They should also prevent damage to the surface and contamination of the surface from the surrounding surfaces. There should be no trip hazard or void present.

4.4 Playing Lines

Due to the nature of MUGAs there may be difficulties in players distinguishing between the different lines for the various sports provided for. It may be necessary to omit some lines, especially where the use of a particular sport may not be particularly frequent.

The use of colour can help to players to identify the relevant play lines. As a rule of thumb, the most frequently used sport should be marked out in white, the second most played in yellow, followed by blue and red. The MUGA should be lined for 5 a-side football and basketball as a minimum.

4.5 Initial Settling Down Period For Surfaces

Consideration should be given to elements that may affect the finished surface. Bitumen-bound surfaces may become soft during hot weather. The use of wheelchairs should be monitored during the first year.

4.6 Fixtures And Fittings

The MUGA should be properly set up so as to cater for the various games. Combined soccer and basketball nets should be provided as well as rebound boards.
Waste bins should also be provided adjacent to the MUGA site. These bins should be selected so as to minimise the potential for illegal disposal of household waste in them.

4.7 Fencing and Gates

Fencing should be placed around the MUGA, to a height of at least 2.1m, so as to meet the following requirements;

- Retain balls in the playing area
- Allow spectators to view the game safely
- Provide security for the playing area
- Keep animals out

In addition, the height of fencing needs to be increased at the goal ends. This should extend to a height of 3.7 m behind the goalmouths and also extend at least 3m to either side of the goalmouths.

Green plastic coated chainlink fencing is the absolute minimum preferred, with the inclusion of rebound boards/perimeter kickboards. For a height of 2.1 m, the chainlink selected should conform with the requirements of BS 1722-1:1999 Specification for chainlink fences, fence type 215 from Table 2, with either concrete or steel posts. Extra straining wires are recommended along the side fencing.

It is recommended that welded wire netting, rather than chainlink, is used around the goalmouth areas, rather than chainlink, to prevent excessive damage and bulging of the chainlink. Extra straining wires, or preferably light angle iron, are strongly recommended in this area as well.

Heavy-duty green plastic-coated galvanised welded mesh fence will also be acceptable. In this case, kickboards will not be required. These fences should conform with the various requirements of BS 1722. Various manufacturers of integrated goalmouth/basketball units also supply suitable perimeter fencing, usually in panel form, which can be built up to a suitable height.

Gates should;

- be 1.2m wide for pedestrians
- be 3m wide double gates for vehicular access
- have removable lintel panels provided for above the gate to allow for ease of access with soccer goals
- be infilled with chainlink fencing / rebound boards / kick boards as appropriate
- be provided with a suitable locking mechanism
- have boot-cleaning facilities provided for at main access gates to reduce the contamination of the MUGA with mud and material from outside the playing area.
- be positioned so as not to create tight gathering or milling points

All gates thresholds should be level or slightly ramped but not stepped.

All steel to be galvanised and powder coated green.

4.8 Ball Rebound Systems

Rebound walls or boards should be provided and they can be made form a variety of materials and can be stained or painted to increase their aesthetic appearance. They allow viewing of the total area and can be seen to have advantages where user and site security issues are a concern.

Rebound boards should be a minimum of 400mm, with 600mmm preferred. While the guidelines for 5-a-side soccer suggest that rebound boards should be 1200m high, the risk of such a height concealing potential antisocial behaviour needs to be taken into consideration as well.

In situations where a proprietary integrated goalmouth/basketball ring is being used, consideration should be given to increasing the height of this unit to 2.4m around the goalmouths, to act as extra rebound.

Kickboards should consist of treated softwood boarding, treated exterior quality composite woodchip boards or panels to BS 5699 or treated exterior quality marine plywood panels with top capping.

4.9 Outline Specification For Multi Use Games Areas

4.9.1 Excavations

The area of works shall be stripped of all vegetation and topsoil to a depth of at least 75mm, the exact depth being determined by the use of trial holes, and deposited on site in temporary spoil heaps. The ground shall be trimmed and levelled using cut and fill.

Any filling should be carried out in layers not exceeding 150mm thickness, and each layer should be compacted before the next is spread. Compacted hard, clean, crushed frost-resistant aggregates should be used for the fill.

Any soft spots should be removed and replaced with imported crushed rock, free from detritus material.

4.9.2 Formation

The finished formation should be trimmed to a tolerance of ±25mm and have a minimum undrained shear strength of at least 50kN/m^2 or a California Bearing Ratio (CBR) of 2% and shall have a gradient of 1:100 across the line of play.

The prepared formation shall be treated with a total weed-killer selected to minimise the risk of future weed growth, and should be applied in accordance with manufacturers guidelines.

A geotextile membrane shall be laid over the formation with joints overlapping by at least 300mm.

4.9.2.1. Sub-Base

A sub-base should be installed for the MUGA that shall
(i) Resist the effects of frost or drought that may be expected to occur in a return cycle of 50 years
(ii) Provide stability to the finished surface such that in use shall not move outside the tolerance for the surface regularity over a period of 10 years.
The depth of the sub-base shall be determined to satisfy design criteria and taking into account any ground investigation surveys previously carried out.

The sub-base should not be less that 75mm of compacted hard, clean, crushed frost-resistant aggregates.

The sub-base should be laid and compacted so the in-situ density shall be not less that 95% of the maximum dry density when tested.

4.9.2.2. Base

The base should consist of one of the following

i hardcore, slag or broken stone laid to the required falls and thoroughly compacted and blinded to a thickness of 100-150mm.

ii 0/32mm size dense coated macadam base material to BS 4987, laid to a compacted thickness of 75mm.

iii hot rolled asphalt base material to BS 594, laid to a compacted thickness of 75mm.

4.9.2.3 Binder Course

The binder course should consist of either:

i) 0/20mm size open-graded coated macadam base material to BS 4987, laid to a compacted thickness of 45mm.

ii) hot rolled asphalt base material to BS 594, laid to a compacted thickness of 45mm.

iii) 0/20mm size dense coated macadam to BS 4987, laid to a compacted thickness of 50mm.

Selection for the above materials should be made on the basis of type of surface course to be applied. For example binder course ii or iii should be employed under rolled asphalt or dense/close-graded macadam surface course, but any of the binder courses may be used under other coated macadam. If a fully porous construction is desired, a porous surface course should be accompanied by an open-graded binder course and by base .

4.9.2.4 Surface Course

Proprietary forms of surface course, designed to remain porous, are available. They are usually based on a 0/6mm size bitumen macadam with an aggregate grading chosen by the supplier.

An impervious surfacing will be provided by a hot rolled asphalt surface course, generally to BS 594, but incorporating 30% of 6mm coarse aggregate (30% 0/6) or, where a particularly fine textured finish suitable for use by children is required, containing no course aggregate (0% 2/2) (the latter being known as asphalt sand carpet of sand asphalt).

A Surface course that is initially porous but will become relatively impervious under use is provided by 0/3mm size fine-graded macadam or 0/6mm nominal size medium-graded macadam, both to BS 4987.

A compacted thickness of surface course of 25mm is recommended for the 0/6mm size macadam's, although a 15mm thickness will be adequate for the fine graded macadam. A 30mm thickness is recommended for the 30% 0/6 and 0% 0/2 rolled asphalt mixes.

A number of proprietary surface course materials of 3mm or 6mm nominal size have been developed for surfacing of play areas. These should be laid to a thickness and in the manner recommended by the manufacturers.

The final surface shall have a fall of 1:100 across the line of play.

4.9.3 Drainage

Perimeter carrier drains should be laid to one or all sides of the MUGA, using 110mm diameter perforated plastic land drainage pipes. Excavate, commencing at reduced level, 300mm by 600mm deep ensuring a regular fall. Backfill and surround with 20mm clean cut stone or gravel to formation level.

Lay three rows of lateral drains per MUGA and backfill with 20mm pea gravel. Connect to main drain with 110mmP.V.C. and allow for all necessary connections, junctions.

Rodding eyes with cast iron covers, shall be installed at each corner of the MUGA.

Any existing drains cut through during the construction of the MUGA shall be re-connected into the new system.

4.9.4 Perimeter Edgings

Edgings should be precast concrete kerbs or other approved edgings, and shall be haunched in concrete. The maximum gap between the outer kerb face and adjacent perimeter fencing shall be 10mm. The haunching shall incorporate movement joint at appropriate spacings.

4.9.5 Fencing

Chain link fencing to perimeter of MUGA

- Mesh shall be 50mm square weld mesh.
- Fence to be a minimum of 2.1m in height.
- All posts to be set in 20N concrete, 450 x 450 x 600mm..
- All mesh and post to be galvanised
- On low level fencing no protruding ends of mesh or wire shall cause hazards to players, particularly children.
- All steel to be powder coated green.

If a proprietary system of perimeter mesh fence is selected of a minimum height of 2.1m, the requirement for chainlink fence is removed. All other provisions for gates, fixings, edgings, etc, should be satisfied.

Fixings

No protruding fence fixings are allowed.
Fixing bolts to be assembled with heads inside and bolts trimmed to within 6mm of the nut.
Trimmed ends should be burred and treated or shear head nuts used.

Gates and Entrances

Single gates to be a minimum of 1.2m wide.
Double gates should be 3m wide to allow for access of vehicles and maintenance.
Gates to be hung plumb, level and secure
Gate lachess shall include provision for padlocks.
Dog or anti-contamination grids should be places at all entrances.
All steel to be powder coated green.

Rebound Boards/Kick Boards

0.4m- 0.6 high by at least 12mm thick

Treated softwood boarding, treated exterior quality composite woodchip boards or panels to BS 5699 or treated exterior quality marine plywood panels with top capping.

Evenly spaced vertical expansion gaps to be left between adjacent boards, in accordance with manufacturers recommendations.

Boards shall be mounted to twin welded flats mounted to line posts and steel section angle support rails.

Mesh shall be taken behind kick boards/ rebound boards and attached to prevent hand traps.

4.9.6 Sports Equipment

The contractor shall supply and erect sports equipment and fixtures as required. Standard equipment such as combined basketball/soccer nets shall be provided.

4.9.7 Reinstatement

The site is to be left in a clean and tidy condition. Any damage caused to surrounding areas and surfaces is to be reinstated. All hard areas should be reinstated with a similar material to the existing surface. Grassed areas should be reinstated to fit in with the existing surroundings.

5.0 Tennis Courts

The design of the scheme should be visually pleasing and create an environment that will be attractive to users of all ages and abilities. It should be fit for its intended purpose and made attractive by the considered use of landscaping materials, textures and colours in suitable combinations. Double tennis court should be put in place at 33.54m wide by 36.57m long, included in this is clearance between courts and sidelines.

5.1 Design and Construction Considerations:

Playing Lines:
The outside dimensions of the playing lines should be as follows:
Doubles 10.97m x 23.77m
Singles 8.23m x 23.77m
All lines should be not less than 2.54 cm nor more than 5 cm in width, except the base line which may be up to10 cm in width and the centre line which should be 5 cm in width.

Clearance Between Courts
Where courts are constructed within the confines of a common enclosure, the distance between sidelines should be not less than 3.658m. Where space permits, it is desirable to provide additional space between sidelines to enhance play; 7.315m is recommended.

Tennis Court Orientation:
A tennis court should be laid out to minimize players looking into the sun when serving or when following the flight of a ball. A tennis court also should be laid out to avoid distracting shadow lines and patterns on the court surface. Ideally courts should be oriented with a play along an approximate north/south axis.

Levels

- Gradients must not exceed 1:100.
- Where possible the gradient should be across the line of play.

In all cases gradients must be uniform throughout.

The lowest elevation of the tennis court surface should have a minimum height clearance from the surrounding landscape area of 15cm

Locations for Tennis Courts
Good locations for tennis courts include:

- Those close to car parks and support facilities
- Those where there are good sound absorbing/spectator terracing and banking possibilities e.g. the facility sits in a natural amphitheatre-where it is possible to view activities from on high and where the facility will be sheltered by the surrounding terrain
- Those where there is good access to the facility for people with disabilities.

Avoid locating a tennis court:

- Where steep gradients lead to and away from the area, especially at personnel and maintenance vehicle access points.
- Where there is poor access to the facility for people with disabilities
- In very exposed terrain
- Where it is not possible for access roads/footpaths and maintenance routes to reach the main personnel/maintenance gates
- Where incoming services (electricity feed cables and water/drainage) will be prohibitively expensive to install
- Where too many site perimeter and internal security/access gates have to be passed, meaning gates keep having to be locked and unlocked
- Where emergency vehicles cannot readily get to the facility
- Where users have to traverse naturally turfed areas (mud, debris and contaminants all lead to the rapid deterioration of the playing surface)
- Too close to unstable ground (landslides) or drainage outfalls (back falling or ponding on the tennis court due to blocked drains)
- Too close to deciduous (leaf drop in autumn) or leaf sap forming trees
- Where non-sport users may be passing and be at risk of injury, through unauthorised entry or access etc.

Paths and Lighting

Paths must be provided to all court access points and to allow movement around the site. Paths must have a suitable camber to shed water and be constructed from a suitable low slip material. Paths must be suitable for disabled persons.

5.2 Court Fencing

All courts are to be fenced in green plastic coated chain link fencing. A 50mm or 60mm diameter tubular or square framing, plastic coated green is required. Careful attention should be paid to fixings, to ensure that there are no sharp edges that would cause injury to either players or spectators.

The base of the fencing should be constructed so that the tennis balls cannot get underneath the fencing. This can take the form of a horizontal bracing bar.

Generally the fencing should be between 2.75m to 3.0m high, lower sections should be considered for viewing

5.3 Gates

Two gates suitable to allow maintenance access must be provided per enclosure and should be provided with weatherproof locks.
Gates should be 1.2m wide for pedestrians and 3m wide for vehicular access to site.
Gates should be infilled with chain link fencing, same as that for the fencing.

5.4 Fixtures and Fittings

Equipment provided per court should include the following:

- Waste bins
- Net and posts
- Centre band and anchor
- Maintenance equipment.

5.5 Kerbing

Concrete kerbs must be provided around the perimeter of the tennis court so as to prevent wearing away of the surface at the edges.

5.6 The Court Perimeter

A strip of ground at least two feet wide outside the surround fence should be kept clear of vegetation at all times to form a barrier against plant and weed encroachment onto the playing surface. This may be done quite simply with an appropriate weed killer. Climbing plants such as roses or clematis should not be planted to grow up the surround fencing. Not only may their roots disturb the court surface and their leaves pollute it, but they may also cause severe damage to the courts in high winds.

5.7 Tree Roots

If possible, no trees should exist within 3m of the court area. Trees, hedges and shrubs to be planted close to the court should be chosen carefully to avoid any aggressive root systems. Roots can be a threat to the facility itself by distorting or cracking the surface. This is especially the case for strong-rooted varieties such as poplar, willow and sycamore. If their use is essential, the insertion of a root barrier between the trees and the court is strongly recommended. Planning or conservation consent should be sought where necessary.

While such measures will inhibit root incursion, the only certain preventative measure is repositioning the tennis court, generally to a distance equivalent at least to the potential height of the tree and its potential canopy width.

5.8 Overhanging Branches

Branches of trees, which overhang the court invariably, cause problems. Water dripping from the branches may cause slippery or discoloured patches, encouraging the growth of algae or moss and sometimes even erode the surface. Leaf sap, insect secretions and bird droppings are also problems, which may be associated with branched overhanging courts. It is strongly recommended that that overhanging branches be pruned back.

5.9 Disabled Users

All tennis facilities must meet or exceed the standards required by law (set out in the current Building Regulations).
The following should be considered when designing any tennis facility:

- Access to all areas
- Level bolts to allow them to be reached
- Access points that are too narrow. Sports chairs range up to a 1000mm wheelbase
- Path widths that do not allow passing of wheelchairs
- Steps and thresholds that obstruct movement and use
- Use of colours that are inappropriate for anyone with a sight impairment
- Ramp gradients that are steep or have no landing areas
- Steps generally
- Viewing – height of balustrades and fences

5.10 Site Considerations

The ultimate performance of any tennis court depends to an important degree on the subsoil and drainage conditions. Before work begins a full and detailed investigation of the site is required.

The drainage arrangement required and depth of base course will depend on the site soil conditions.

5.11 Drainage

Perimeter drains should be enough to provide adequate drainage for the tennis courts. Perforated pipes should be used and laid to a gradient to ensure a flow, and should be brought to within 100mm of the surface with 25mm round stone and brought to the surface with 10-12mm pea stone.

5.12 Tennis Court Surface

There are a number of different surfaces that can be used for tennis courts, depending on the use of the courts and the location. A popular surface for tennis courts would be porous macadam. Bitumen used for tennis courts should be porous and frost resistant and may be constructed of a single or double course of macadam.

Bitmac is a term used to describe bitumen tarmacadam. The material is an all-weather specialised porous tarmacadam surface, easily maintained, which can be colour coated with a slip-resistant acrylic resin paint. Bitmac can be mixed to be porous, medium dense, or dense. For tennis courts a porous mix is usually most applicable. This surface is ideal for tennis courts.

5.13 Colour Coating Macadam Courts

Acrylic-based paints containing slip-reducing agents are most commonly used to colour coat macadam courts. A range of colours is available, although red and green are generally the most common combinations.

While creating a more aesthetic and faster surface the paint may reduce foot-surface traction and slip resistance and should be tested in accordance with BS 7044.

5.14 Outline Specification For Tennis Courts

5.14.1 Site Preparation

The area of works shall be stripped of all vegetation and topsoil to a depth of at least 75mm, the exact depth being determined by the use of trial holes, and deposited on site in temporary spoil heaps. The ground shall be trimmed and levelled using cut and fill.

Any filling should be carried out in layers not exceeding 150mm thickness, and each layer should be compacted before the next is spread. Compacted hard, clean, crushed frost-resistant aggregates should be used for the fill.

Any soft spots should be removed and replaced with imported crushed rock, free from detritus material.

5.14.2. Earthworks

5.14.2.1. Excavations

Excavate over site to remove topsoil to an average 300mm deep; deposit on site in temporary spoil heap.

5.14.2.2. Groundworks

Excavate to remove topsoil.
Establish 1:100 fall to formation in a single plane across fall or lengthways.
Compact Formation Layer.
Place Geotextile material.

The finished level of the Tennis court should be levelled and compacted with a finished elevation 100mm – 150mm above the surrounding ground, allowing for water runoff and vegetation control around the perimeter.

Thickness of Sub-Bases

- minimum 150mm compacted depth of non-frost-susceptible, free draining aggregate.
- 40mm compacted base course of 10mm, 14mm or 20mm open graded macadam.
- 25mm open grade porous macadam wearing course consisting of 6mm diameter aggregate.

5.14.2.3. Herbicide

Apply an approved herbicide in accordance with manufacture's recommendations to subgrade of paved areas.

5.14.2.4. Compaction of Subgrade

Defer final excavation to formation level until immediately before compaction of subgrade.
Soft spots must be brought to attention.
Subgrade must be relatively dry at time of compaction.
Where local excavation and backfilling has taken place make additional passes of the roller.

Immediately before placing sub-base thoroughly compact subgrade with a roller weighing not less that 2.5 tonnes or equivalent other plant.

5.14.2.5. Granular Material

Free from harmful matter, well graded, passing a 75mm BS sieve and in any one layer of crushed hard rock.
Must be non-frost susceptible (heaving not more that 13mm after 10 days). Test if required.

Placing Granular Material Generally

Ensure that subgrade is free from loose soil, rubbish and standing water.
Take all necessary precautions to ensure stability of adjacent structures. Place and compact material against or over structures, membranes or buried services in a sequence and manner, which will ensure stability and avoid damage.

Granular Sub-Base / General

Spread and level and, as soon as possible thereafter, compact with a roller weighing not less than 2.5 tonnes or other equivalent plant.

Protection

Cover sub-base as soon as practicable with subsequent layers.

Prevent damage to subgrade and sub-base from construction traffic, construction operations and inclement weather.

5.14.2.6. Base Course

Rolled asphalt paving to Tennis Course

- Lay and compact bituminous materials to BS 594: Part 2 and BS 4987:Part 2 as relevant
- Wearing course: Thickness 25mm
  Material: Open grade porous macadam consisting of 6mm diameter aggregate.
  Basecourse: Thickness 40mm.
  Material: 10mm, 14mm or 20mm open graded macadam.

5.14.3. Preparatory Work/Requirements

5.14.3.1 Materials Generally

At the time of delivery a test certificate should be submitted for each manufacturing batch of bituminous material, certifying compliance with this specification and the relevant British Standard and giving complete information on the completion of each mix.

5.14.3.2 Samples

Before placing orders submit representative samples of uncoated chippings as Clause 360. Ensure that delivered materials match samples.

5.14.4 Drainage

Perimeter Drains

Excavate perimeter drains around the tennis courts to a depth of 550mm. Excavate to a width of 400mm. Insert a 160mm perforated pipe and bring to within 100mm of the surface with 25mm round stone and bring to the surface with 10-12mm pea stone.

5.14.5 Edging

Supply and lay 150 x 50 p.cc. kerb edgings on concrete foundations, haunched both sides of pitch.

5.14.6 Fencing and gates

Chainlink fencing to perimeter of tennis court.

Mesh shall be 50mm square weld mesh.

- Fence to be a minimum of 2.1m in height.
- All posts to be set in 20N concrete, 450 x 450 x 600mm..
- All mesh and post to be galvanised
- On low level fencing no ends of mesh or wire shall cause hazards to players, particular children.

- All steel to be powder coated green.

Fixings

No protruding fence fixings are allowed.
Fixing bolts to be assembled with heads inside and bolts trimmed to within 6mm of the nut.
Trimmed ends should be burred and treated or shear head nuts used.

Gates and Entrances

Single gates to be a minimum of 1.2m wide.
Double gates should be 3m wide to allow for access of vehicles and maintenance.
Gates to be hung plumb, level and secure
Gate lathes shall include provision for padlocks.
All steel to be powder coated green.