

MTB TRAILS

Method Statement

Purpose built mtb trail networks must deliver challenge, excitement and a good work-out for a user group that ranges from 5 year old kids through occasional cyclists right up to hard core enthusiasts. The trails must match technical difficulty to route grade and should provide safe fun, up to date riding features and that special forest experience on a busy mid-summer weekend or on a soaking wet Monday in January. Minimal risk to the cyclists and to other forest users should be designed in, and erosion and trail maintenance designed out.

To provide all this takes careful route planning, tight control of trail gradients, 'belt and braces' build specs, the right type and quantities of building materials and quality construction of every trail metre.

The budget costs for this project are based on current best practice in terms of trail design and on construction techniques that produce riding surfaces that can withstand over 1000 passes a week with minimal maintenance.

Route Design

All mtb routes to be directional.

Routes will skirt existing walking areas and technical trail will be sited in remote or seldom visited areas of forest.

Shared or multi-use trail will be clearly signed as such and will incorporate regular passing places. Trail width 1-2m.

Marked routes will have no downhill forest road or downhill, shared trail.

Average gradients on climbs and descents to be within the range 4-8%.

Optional technical 'short cuts' or off-line options to be provided on all grades of trail. These sections will add interest for the more experienced riders. They may be steep or difficult to ride and would normally be built from pitched rock.

Black Grade trail will generally be sited on high ground or in remote locations to ensure that it takes some effort to reach sections that might pose a risk to novices.

Cycling to the forest from Keswick will be encouraged by the provision of a singletrack climb from the existing entry point north of Thornthwaite, up to the high ground of Beckstones Plantation.

Ground Conditions and Materials

A good percentage of the ground in Whinlatter Forest is steep and dry, with thin organic top-soil and thick layers of ironpan or shale-like mineral soils on a hard base. Any level areas or dips tend to hold water, but drainage is generally good. The bedrock throughout the forest is well covered and is only exposed on hill-tops, ridge lines, and on the steep aspect overlooking Thornthwaite, where big outcrops with vertical faces create some real exposure. The rock is generally loose and friable in nature and breaks up into small plates, shards and square edged gravel and stones. Very few solid rocks or boulders of decent size can be found in any part of the forest.

The deep mineral soils and crumbly bedrock provide ideal conditions for machine building of 'as-dug' trails. Access to most areas will be easy and safe for tracked excavators and dumpers, because it will be possible to dig a solid machine track on all but the steepest of hillsides, even if the bedrock is near to the surface. A trail bench cut into any slope, or a trail bed laid with subsoil dug from borrow pits will produce a sound base on which to build pitched stone or to spread imported surfacing. Only the strips of softer ground within 30-100m of water-courses or the odd wet dips and level areas will require the importing of crushed rock as a sub-base.

Fine shale and clean sub-soils can be found at levels higher than 350m, in many parts of the forest. This material will be ideal as a trail surface. Lower down, where the soils have a higher silt and organic content, imported material from elsewhere in the forest or 'type 1' hardcore from a local quarry will be required to ensure an all weather trail tread.

The Whinlatter geology may provide safe m/c access, good drainage and nice crumbly rock for the Green and Blue grade cycle-paths, but to build steep or technically challenging trails, the technique of stone pitching must be employed. With no solid rock to quarry or gather in the forest, all the boulders, hand pitching rocks and slabs must be brought in from local quarries or from FC ground where the rock is much more suitable. This presents a major cost implication on one hand but on the other it forces the use of civil engineering scale construction methods. The benefit being that there will be no temptation to skimp on material quantities or build quality and there will be less of a restriction on boulder or slab sizes that can be transported along the trailway. The resulting trail will be far more durable than one built using micro diggers and power barrows and the riding features that it will be possible to build will be of an entirely different scale.

Trail Design and Construction

Trail construction methods will vary depending on local ground conditions and access limitations, but the finished trail cross section will be similar throughout the forest. Full bench construction will be used unless conditions dictate a raised edge or causeway, in which case sturdy retaining or 'crib' walls will be constructed from imported rock and boulders. On firm, dry ground, the trail bed will simply be cut into undisturbed sub soil or friable bedrock. Elsewhere, a 200-300mm deep bed of as-dug mineral soil or imported sub-base will be laid into a scraped tray and compacted with the excavator bucket. The trail surfacing will consist of a 30 - 100mm layer of 'good' mineral soils, fine as-dug shale, or 0-25mm hardcore, laid flush with the surrounding ground and compacted with a Wacker plate. Materials will be sourced from the inside corner of the m/c track, from borrow pits along the trail, from quarry sites within the forest or from FC or commercial quarries, in that order. All steep sections, braking points, drainage dips and run-offs to be built from pitched stone. Trail gradients, outslope angles, grade dip dimensions, backslope and downslope finishing etc, will all adhere to accepted IMBA guidelines.

As a general rule, large radius rolling crown switchbacks will be used where drainage to the outside of the corner is desirable and where the carriage of speed is not an issue. (normally on climbing trails). Banked or 'climbing turns' of various styles and radii will be used elsewhere. Some switchbacks on Red or Black grade trail may be tight, tricky to ride and would be built from pitched rock. Surface drainage by careful manipulation of trail gradient and outslope will be used in preference to other methods. Piped culverts will be acceptable where their use results in a better riding experience. Exit and entry chicanes and other speed control features will be built from rock rather than timber, whenever possible.

Safe off-road biking is based upon mastered technical skills acquired in a progressively sequential manner; this is true of novice and elite rider alike, irrespective of age. This progression has been built into the trail design by the concentric increase in technical difficulty as the distance from the central facilities increases. This is clearly illustrated on the accompanying map.

The two most fundamental elements of sustainable recreational use of a forest environment is the harmonious co-existence of different user group requirements. Whilst each activity makes a range of demands on the forest structure, evidence exists across a range of forest sites that multi-access use is significantly safer when adequately managed. It is, however, acknowledged that Whinlatter Forest is a more established visitor location with a larger percentage of pedestrian users.

The proposed purpose built mtb trail network subscribes to internationally recognised location and construction policies. This is combined with clear, unambiguous, and informative signage, designated horse trails, walking routes, orienteering posts, and one-way flow systems, all of which contributes to safe multi-use. There are also designated quiet zones and "no-go area". Each of these features has been comprehensively researched, consulted upon, and is now integrated into the trail design.

The trail design overcomes any likelihood of direct trail contact between the various forest users; bikers, horse riders, bird watchers, runners and walkers. Trail design and management procedures at mtb sites across the UK have now virtually eliminated multi-use conflict. Incidents which do occur are almost exclusively the result of 'illegal' or 'unofficial' actions by particularly irresponsible individuals, and cannot be legislated against.

To encourage the acquisition of skills, the development of confidence, and understanding of the technical aspects of the off-road riding, there is to be an extensive **children's/novice area, skills loop, and family cycling zone** all located adjacent to the car park and "trailhead" facilities. This specific area has a number of features that are designed to accommodate the acquisition of skills, across moderate elevations, while maximising fun. They include:-

- variable terrain - this provides an opportunity to practice basic cycling skills on different off-road surfaces
- central 'pit stop' - to provide 360 degree supervision and encourage independent travel
- obstacle course - providing practice locations across the standard range of mtb trail features with 'rabbit runs' for the less confident
- skills promotion - simple test procedures to reinforce competence, skill acquisition and achievement; to receive a 'certificate of competence'
- interpretation - an orienteering style challenge that encourages participation, fun, and achievement
- signage - introduction to the signage system and interpretation symbols in use across the whole trail network
- family features – this are will have facilities for families to picnic and enjoy the forest environment making the visit to the site an all-day family experience

So far as the network of trails is concerned all proposed trails across the project subscribe to the nationally recognised CTC Standards for Grading Waymarked Recreational Cycle Trails. This is a colour coding system adopted and endorsed by IMBA-UK and relates to four grades, green through to black (App'6.1).

There is an additional standard of ride known as Freeride which covers all sorts of riding styles:- dirt jumping, trials riding, Urban and North Shore. It's about pushing limits of balance, nerve and bike handling skills, on any terrain or obstacle that might be a challenge. It's not about speed or sloggng up an endless climb, it's spending time with mates in a local forest or at a dedicated riding area, building and trying new stunts, practicing, taking in the scene.

Freeride means 'playing on your bike', and that describes the laid-back atmosphere of a Jump Park or 'North Shore' trail, but there is a hard edge to the riding that the word 'play' does not encompass. To drop a four foot ledge or ride a skinny timber see-saw takes skill and nerve, a full set of knee and elbow pads! Freeride is now a big part of mainstream mtb and it is not restricted to the 'Lifestyle' element. Kids of all ages, Old-School XC riders, Downhillers, BMX'rs, all want to have a go; on riding features that match their current skill level. A Freeride Area is always a popular addition and is the social heart of any up-to date trail network.

This overall coding system is currently being reviewed nationally and is likely to result in formal national standards

The proposed trail network within Whinlatter is now detailed following extensive on-site research; each trail route has been walked, surveyed, mapped, and analysed to comply with terrain, access, multi-use, drainage, environmental and construction constraints. With this we produced a detailed mtb trail Route Summary (App'6.2) with the total distances shown in metres.

NB:- These are included for illustrative purposes only. As the data from the various impact assessments arrive these details constantly change; the % declining as we progress to completion. The map, produced with the final submissions, will include all the relevant adjustments.