



# THE MOUNTAINEERING COUNCIL OF SCOTLAND

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## SCOTTISH CLIMBING WALLS: Appendix 3 Climbing Wall Facilities: Specifications

### 1. Climbing Wall Definitions

#### 1.1 Type of Wall

The MCoS recognises the need to develop the following types of climbing wall structure in Scotland. These can be combined together at a suitably sized site or developed as separate facilities (e.g. a dedicated bouldering venue). All walls should ideally be situated in a dedicated space or room so as not to clash with other sporting activities. They require unlimited access throughout the day / week (weekends and evenings till late are the most heavily used times).

It is recommended that the type of wall design is specific to the requirements and that it is not possible to utilise one wall for all climbing disciplines (e.g. a lead wall cannot be used simultaneously for bouldering).

For details of the design, development and management of walls the MCoS supports the recommendations in the "Climbing Walls Manual" (3<sup>rd</sup> Edition, 2008).

##### 1.1.1. Bouldering walls

General training walls with a dual function of allowing for the pursuit of physical excellence, as well as offering a relatively safe 'solo' climbing experience which is fun and perfect for a grass-roots introduction to climbing. There are two styles: indoor venues and outdoor venues to cater for the general public as a park or playground facility (Boulder Parks). Dedicated bouldering venues are particularly successful in urban areas\* where local access to natural crags offering this style of climbing is not available.

*Specification: Maximum 4m - 4.5m high; incorporating natural features such as slabs, off-vertical walls, roofs, overhanging walls, arêtes, crack lines; flakes, free-standing boulders etc. where appropriate to the site. Additional bolt-on 'volumes' add adaptability.*  
*INDOOR: as long as possible; flat panel construction with minimally featured panels to facilitate route-setting in bouldering competitions. Primarily with interchangeable holds (bolt-on holds) incorporating a high density grid of potential holds; Standard deep, secured matting with unbroken covering.*  
*OUTDOOR: free-standing boulder-style construction with fixed holds; pea gravel of playground standard rubber crumb / tile matting.*

\* Supported by usage figures from climbing walls

### 1.1.2. Lead walls

Walls over 8m in height designed for 'on-sight' leading and top-roping. They should be capable of catering for 'Leading' competitions at a local and regional level. They may be built to higher international competition standards to cater for national events.

*Specification: The wall should be a minimum height of 6m. There is no upper limit on height. Walls constructed over 25m require belay stances for multi-pitch style climbing. Walls would need to be long enough to incorporate a recommended climbing footprint of 1.5m for each route line required. They should incorporate natural features such as slabs, off-vertical walls, roofs, overhanging walls, arêtes, crack lines; flakes, etc.; incorporate a high density of interchangeable holds and variable overall design. 'Volumes' and other add-on features add adaptability. Design should also take account of circulation space for those waiting to climb and allowance made for some spectator capacity for competitions.*

### 1.1.3. Instructional walls

A term which incorporates 'Adventure Walls'. These are of particular value to provide suitable facilities to instruct climbing and other adventure type activities in urban areas and so ease the pressure of over-use on the natural crag environment.

*Specification: Multi-purpose design with leading, bouldering, belaying, abseiling and rope course facilities (perhaps combined with soft-play facilities). Could include an outdoor tower. Suitable for incorporating disabled facilities. The wall design and density of holds on the wall should cater for small children. In general the wall would not be too steep but would include slabs, arêtes, vertical walls, corners, and belay ledges with non-climbing access at the top.*

*Instructional walls which are to be used for the training of Instructors through the National Awards are required to have a minimum specification of height, belay stations etc. It is recommended such walls incorporate intermediate belay stations for multi-pitch instruction, a mix of bolt and 'natural gear' belay points, abseil areas*

## 2. Style of Wall

The MCofS also sees the development of a variety of climbing walls in Scotland that reflects the diversity of climbing that exists outdoors. As well as the now standard provision of leading walls with in-situ bolt protection the MCofS would expect walls to be developed where leader-placed protection could be experienced, as the majority of routes in the country will remain of this style of climbing. Such walls are required in order to allow for a suitable progression in the player pathway from bouldering to leading on bolts to leading on gear and to give a wider appreciation of climbing variety. Wall where simulated ice climbing is possible is advantageous in Scotland (which has a rich history of winter climbing renowned throughout the world), be it artificial or real ice surface in design. The development of technology has gained pace and it is now possible to produce real ice walls at operating costs that would be commercially viable. Indoor competitions using ice climbing hard wear and techniques is popular and allows for sport specific power and stamina training (utilising 'dry-tooling' techniques on normal indoor walls).

The MCofS will encourage the development and expansion of all the following styles of wall:

- 1. Bouldering walls (indoors).**
- 2. Boulder Parks (outdoors).**
- 3. Bolt protected leading walls.**
- 4. Gear protected leading walls.**
- 5. Winter-style leading walls (natural ice).**
- 6. Winter-style leading walls (artificial surfaces).**
- 7. Adventure Walls / Instructional Walls.**

### **3. Scale of Wall Facility**

In order that facilities cater fully for the climbing populations in the different areas, the MCofS sees a need to provide the following three classifications of walls. They may/may not be combined together in different areas:

#### **3.1. Boulder Parks (catering for both novice and elite)**

A series of outdoor, free-standing bouldering facilities in major towns across Scotland.

#### **3.2. School Walls (catering for local children climbing populations).**

The MCofS supports the development of specific facilities in all schools in Scotland. These will vary from basic small bouldering walls ('Traverse Walls') in Primary Schools (often incorporated into play areas) to slightly larger lead walls in High Schools (incorporating up to 5 'ropes') and with a separate bouldering wall (or cave). The building of Community Campuses which are open to the public allows local schools to also cater for local adult climbers. There are then opportunities to enlarge the wall to a 'Local' scale facility.

#### **3.3. Local (catering for smaller local climbing populations & visitors).**

Smaller scale walls that can be either bouldering and/or lead in design. There is scope for the provision of small wall developments in areas of medium to low population, if it can be shown that the facility would attract usage or perhaps the wall can also cater for a substantial number of visiting climbers who would use the wall in inclement weather. It is unlikely that such walls would be commercially viable as a stand-alone facility, but may be if combined with other sporting facilities that serve a small local population. A typical example would be the use of a redundant squash court in a local sports centre.

#### **3.4. Regional (catering for larger area populations).**

The MCofS development strategy for player pathway development requires a network of large "Regional Centres". These should cater for larger populations of dedicated climbers, youth groups, community groups and the general public. These could be part of a larger community complex such as a major leisure centre or a stand-alone commercial project catering only for climbing. They will act as the 'hubs' for schools climbing development. They need to be able to cater for Scottish National competitions (such as Scottish Schools Competition Finals, the Scottish Youth Climbing Series, the Scottish Youth Climbing Championships and the Scottish Tooling Series as well as national bouldering and Leading Ladder competitions).

Required facilities:

- ❑ *Bouldering Wall* (preferably self-contained for competition use) of a size to cater for a large number of climbers (20m+ long)
- ❑ *Leading Wall* (preferably self-contained for competition use) allowing for 30+ ropes; offering routes of approximately 10m length as a minimum; incorporating both sport route 'bolt protected' climbing and at least one 'Gear Protected' 'natural climb.
- ❑ *Associated training facilities* (warm-up area, fingerboards, dedicated coaching in performance and training area).
- ❑ *Spectator facilities* (catering, seating for competitions, etc.).

Optional facilities:

- ❑ *Instructional Walls / Adventure Walls*
- ❑ *Specialist medical support*
- ❑ *Childcare (Crèche etc.)*
- ❑ *Retail outlet*
- ❑ *Free Weights and Weight machines*

### **3.5. National Indoor Centre (catering for National & International competitions and Professional Coaching)**

Scotland requires one “National Centre” as a base for a Scottish Team. The National Centre is required to cater for international competitions (IFSC), UK based competitions (such as the British Lead Climbing Competition Series [BLCC], British Bouldering Competitions [BBC], the British Final of the Youth Competitions Series [YCS], as well as finals of Scottish National competitions. It would also be regarded as the governing body’s main centre of excellence in rock climbing, sport climbing, competitions and performance coaching. It would be expected to have both ‘required’ and ‘optional’ facilities outlined for a “Regional Centre” with additional facilities as follows:

- ❑ *Bouldering Wall* (self-contained for competition use) of a size to cater for a large number of climbers (30m+ long).
- ❑ *Leading Wall* (allowing for 80+ ropes).
- ❑ *Competition Wall* (a IFSC standard competition wall allowing International standard events - 12m+ height, 10m+ width, offering constantly steep climbing and be able to accommodate a minimum route length of 15m. The wall design requires a minimum of fixed features and a large number of bolt-on hold fixings for easy route setting).
- ❑ *Instructional Walls* (catering for National Awards requirements)
- ❑ *Ice Climbing Wall* (artificial at least)
- ❑ *Associated training facilities* (fingerboards, warm-up area, free weights and weight machines; performance coaching specific designed areas).
- ❑ *Spectator facilities* (General: catering; childcare (Crèche etc); retail outlet; for international competitions: access for TV, isolation facilities and self-contained area for bouldering/warm-up with associated toilet facilities, seating for spectators, etc.).
- ❑ *Specialist medical support* (Physiotherapy).

### **3.6. National Outdoor Training Centre (catering for professional training)**

Scotland requires one “National Outdoor Training Centre” which will be regarded as the governing body’s main centre of excellence for the training of professionals in ‘Instruction’ and ‘Coaching’.

Facilities expected for this venue are as follows:

- ❑ *Bouldering Wall* (dedicated area for performance coaching).
- ❑ *Leading Wall* (allowing for 10+ ropes minimum; incorporating ‘natural gear’ lines (without back-up bolts; designed primarily for instruction but with dedicated sections for performance coaching; wall style capable of accommodating local / national competitions).
- ❑ *Instructional Wall* (catering for National Award training requirements; multi-pitch experience; self rescue; rescue team training, abseiling; incorporating bolt and ‘natural gear’ belay points)
- ❑ *Ice Climbing Wall* (both artificial – dry-tool - and natural – ice – the latter incorporating realrock to simulate ‘mixed’ winter climbing; size to cater for competitions at National Level only)
- ❑ *Associated training facilities* (fingerboards, warm-up area, free weights & weight machines).

## 4. Climbing Wall Systems

A “Needs Analysis” should identify the ‘Type’, ‘Style’ and ‘Scale’ of a wall development. During this phase it is also important to identify the main purpose of the wall. After this has been decided, the design of the wall can be undertaken and there are many possible wall systems available from manufacturers. The options vary in order to cater for different locations, building design, supporting structures, budget and aesthetics. Each wall system option offers different climbing possibilities.

There are essentially two basic options which can be varied as follows:

### Panel System

- Plywood panels
- With a high friction resin surface
- Resin surface panels can incorporate micro features in unlimited and varying densities
- Flat panels, profiled panels, multi-faceted designs are all possible

### Sculpted System

- Sculpted to mimic natural rock with natural rock features
- With high friction surface
- With or without micro features
- Can be sculpted to any shape
- Outdoor designs using concrete and mimicking natural boulders

In general terms the MCoFS would support the wall system that best fits the purpose of the proposed development as follows:

#### **General Recreational walls:**

Low Budget: Multi-faceted panel systems with resin friction surface

High Budget: sculpted systems with very small number of micro features

#### **Visually High-Profile walls:**

Sculpted, resin friction walls in free-form styling to mimic real rock with micro features found on real rock surfaces – high visual importance

#### **Bouldering and Lead Competitions:**

Low Budget: panel systems with or without resin friction surfaces, no micro features

High Budget: Sculpted systems with no micro features

#### **Outside Boulders:**

Sculpted concrete systems made to last

#### **Beginners Walls:**

Schools and Scout or other youth groups with limited budgets wishing to offer introductions to climbing and to participate in competitions should consider a more basic panel system with a resin frictional surface and only a few micro features.

Discussion with the MCoFS Development Officer is recommended before deciding upon the most suitable system.