

SPORT ENGLAND

STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE ANTICIPATED IMPACT ON SPORTS FACILITIES

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1. Environmental impacts

Flooding

Effects on water based sports such as rowing and sailing, with clubhouse flooding from storms and rising sea levels. Displacement of these sports in some areas could cause more pressure on environmentally sensitive areas.

Water Shortages

Water shortages are likely to have a big impact on Golf Courses (2396 in England currently) and natural turf playing fields. If the price of water rises, many clubs will close.

Alternative grasses may be used that are more resistant to drought than those that are commonly used today, such as redgra which is prevalent in southern Europe.

There is likely to be a move towards more all weather surfaces such as porous macadam or synthetic turf pitches, or cheaper alternatives. Care will have to be taken to ensure that the materials can be readily recycled. The shift towards all weather surfaces will significantly increase the capital and maintenance costs of a proportion of sports pitches.

Sub-soil drainage systems for both natural and artificial pitches will be adapted to store rainwater for re-use. There will be minor increases in construction costs.

Should climate change lead to longer, colder winters, then there would be a growth in winter sports such as ice skating and skiing, with consequent economic development potential in urban as well as rural areas.

2. Facilities

Indoor facilities

Sports buildings, and swimming pools in particular, consume high levels of energy. In order to minimise energy and water used to produce building materials and components; during construction; and during the life of sports facilities, the technical performance of buildings and M&E systems will need to be significantly improved, possibly beyond standards recommended in Building Regulations.

Sports buildings will be required to achieve excellent BREEAM ratings.

The structures of sports facilities will need to be designed so that they may be readily adapted to meet changes in use over time.

Sports facilities will be located within walking or cycling distance, or close to public transport, in order to minimise the use of (fuel) energy.

Sports buildings offer great potential for generating electricity and hot water by means of photovoltaic and solar panels fixed to the large external wall surfaces.

Sports facilities will be designed to maximise the use of sunlight, while ensuring that appropriate playing environments are achieved.

Where practicable, there should be greater integration of sports facilities with retail and residential areas.

Particular attention will have to be paid to the specification and sourcing of sustainable materials to minimise the amount of 'embedded' energy. To reduce the quantity of building materials needed for construction, and to minimise the energy used for lighting, heating and ventilating sports facilities.

The impact of these changes on individual projects will be an increase in the capital costs, but a reduction in revenue costs.

The impact on construction costs overall may possibly be neutral, since some sports activities, previously played indoors, may be played outdoors or in buildings using forms of construction of lower cost.

Outdoor facilities

It is anticipated that innovative, alternative building structures may need to be developed for outdoor sports, to provide some protection from the elements. For example, many professional football clubs and local tennis clubs have already constructed low cost covered, but unheated, facilities that allow uninterrupted training and coaching throughout the year. Whilst many are intended to be permanent structures, some temporary and are taken down over the summer months to meet planning restrictions on their use.

There may be a need to protect players, particularly children, from exposure to UV radiation, which will limit the time spent in the sun, and the programming of matches. This may lead to more sport being played under cover, either in traditional sports centres or in alternative sports structures, as described above.

Facilities for sports that have traditionally been played outdoors may become more costly, particularly for training.

Timetabling of outdoor sports will be affected to avoid extremes of temperature and weather. Playing seasons for individual sports may change.

Floodlights for outdoor playing pitches will need to be significantly more efficient. Ideally, electricity for floodlit pitches should be generated on site possibly by means of compact wind turbines.

3. Opportunities

A hotter climate may bring a number of benefits:

- More outdoor pools that would encourage greater participation in swimming and reduce the significant running costs of indoor pools.
- Potentially greater participation in outdoor sport because playing conditions would be more amenable.

- More clay courts for tennis, as they would become more viable.
- A reduction in the need for elite athletes to travel abroad during the winter months, thereby reducing costs and impact on the environment through air travel.

4. Variables

It is uncertain whether global warming will lead to warmer or cooler temperatures in the UK.

If the climate will generally be warmer, then it could be anticipated that low hybrid sports buildings, requiring little energy to operate, will be developed to meet the needs of indoor and outdoor sports.

If the climate will generally be cooler, then more sport will be played indoors, in buildings with high technical performance. Alternatively, should snow fall over several months in winter, then it would be possible to encourage people to take part in the types of winter sports currently played in central Europe and Scandinavia.