MOVERS AND SHAPERS

Some of man's earliest interactions with his surroundings involved shaping the land. Today, landforms are gaining in popularity as designers appreciate the interest and atmosphere they can bring to a project. **Kim Wilkie** describes the options for moulding the land

Above and opposite: Terraces flow with the rising land at Heveningham Hall, Suffolk. Established trees were incorporated into the design. The result is fresh and uncluttered, allowing the hall room to breathe.

Landform is wonderfully sensuous. Great sweeps of grass downland or plunging combes can transcend scale as your eyes glide over the surface, stroking the folds and flanks. That sense of running your hand over the land is probably the best way to design. Sandpits, models, thick charcoal on rough paper; you need to be able to feel how the land can flow. When it works, the results can be as practical as they are beautiful. Whether for screening power stations, silencing motorways or preventing erosion, landforms can offer some of the most cost effective and sensible solutions. They also tap into something deep within us. The magical forms of tumuli rising through autumn mist have stirred imaginations from Spenser to Hardy. Viking barrows, sacred circles and earth mazes form a rich sediment of landscape memory.

Early earthworks

Britain is a good place for earthworks. The climate, soils and topography encourage people to go out and build turf-castles. Rain helps to grow abundant grass; sheep and rabbits can keep the surface short and smooth; and the low northern light shows off the subtle shapes to perfection — particularly with the accent of ground frost. Since the pre-historic Avebury Ring and the chalk sculpture of the White Horse in Wiltshire, there has been a tradition in the British Isles of sculpting the land into sensuous forms, held firm by close-cropped turf. Even when the earthworks were defensive rather than sacred, such as Maiden Castle in Somerset, Silbury Hill in Wiltshire or Palmerston's anti-Napoleonic redoubts, they were brilliant land sculptures.

Early earthworks were usually carefully placed on ridges or knolls to take full advantage of the strategic view and make maximum impact from a distance. Their presence still dominates the landscape millennia later. Ironically, earthforms tend to survive even longer than buildings and are repeatedly reappropriated. Burial mounds, such as the one in Richmond Park, have been reused for hunting high points and communication lookouts.

Charles Bridgeman was a particular genius with geometric land sculpting. While breaking away from the surface intricacy of French and Dutch parterre design, Bridgeman worked with a more subtle formality on a massive scale, using the grass-clad shape of the land itself. Changing light and shade revealed the planes of his designs, while a looser frame of woodland trees directed views out into productive agricultural land beyond. Many of

Bridgeman's crisp, turf forms were later smoothed away by Lancelot Brown, but where his work survives at Stowe in Buckinghamshire, Rousham in Oxfordshire and, most particularly, Claremont in Surrey it shows a wonderful dramatic artistry. For much of the later 18th and 19th centuries, more informal and naturalistic earth shaping became fashionable, but geometric turf sculpting was revived with art deco in the 1930s. Percy Cane's grass terraces at Dartington Hall, Devon are a good example.

Influencing the contemporary

Bridgeman's landforms at Claremont, set beside Aislabie's moon ponds at Studley Royal, North Yorkshire, reveal a tradition which has reemerged in contemporary landscape design, such as Charles Jencks' and Maggie Keswick's work at Portrack, Dumfries, and is now inspiring mounds and earthworks throughout Europe. Some of the most imaginative new directions have been led by environmental artists such as Andy Goldsworthy and Richard Long. Goldsworthy's 'Taking a wall for a walk' in Grizedale, Cumbria, for example, humourously combines memory of the old field patterns with a sensuous form that weaves between the trees and land.

Across the Atlantic in the United States, earthworks have also drawn on a separate tradition of Native American design. The materials, scale and light are often different, tending to work with massive rock projects in desert areas. Some earthworks in the US are also clothed with grass — very much in the English tradition. At his farm in Maine, James Pierce has consciously drawn on burial mounds, military redoubts and turf mazes to create a series of sculptural earthworks. Pierce's 'Earthwoman' is a particularly witty addition: a female form with fecund buttocks lies face down in the meadow, the long grass on her flanks rippling in the wind.

Sweeping terraces

My own work has been greatly influenced by this tradition. One of my first projects at Heveningham Hall in Suffolk involved massive earth movements. Heveningham is one of those perfect 18th-century country houses that had the best designers of the day. Sir Robert Taylor built the hall; James Wyatt did the interiors; and Lancelot Brown designed the landscape. Unfortunately, Brown died the year after the design and it was never implemented, but he left behind exquisite three-metre-long plans that we have now been able to implement two centuries later. Two kilometres of lakes have been dug and a 40-metre, three-arched stone bridge will be built shortly.

Behind the hall, the land rises sharply to the south and the garden front has always posed a problem. A typical Victorian parterre had been built on the site in 1877, but the scale and ornamentation jarred beside the 73-metre-long Georgian façade and retaining walls blocked the views from main reception rooms. The registered garden beside the Grade I listed house was clumsy for its setting, shaky in its foundations and, to be a little brutal, not very good design. In a ground-breaking decision, English Heritage consented to demolition and replacement with a completely

new garden of sweeping grass terraces. The terraces flow with the rising land, arcing in a Fibonacci series fan that encompasses the veteran trees and gives the house space to breathe. The design was inspired by the landform, the setting of the hall and the scale of the landscape. I hope that it managed both to shed the mistakes of the past and yet respond to the needs and memories of the place.

Providing a focal point

At Great Fosters in Surrey the problems were different. Great Fosters has had many lives: from a moated, 17th-century Windsor Great Park hunting lodge; to one of the houses that belonged to Jane Austen's brother; to an aristocratic lunatic asylum; to the first country house hotel on the Ascot and

Construction and maintenance

Each project is very different, but here are some general construction and maintenance principles to bear in mind when working with landforms:

Construction

➔ JCB operator: the digger driver is the key. You need someone who can wield a JCB bucket like a scalpel and can really understand the shapes you are trying to create. Placing a scale model in the cab can often be more effective than plans.

➔ Compaction and water retention: compaction, drainage and irrigation are the tricky components. Slopes need to be properly compacted in layers to avoid slump and settlement. Specially designed geotextiles, including biodegradable materials, can be used to improve soil stability and to prevent soil erosion on artificially created slopes. Slopes also need to be well drained to avoid boggy pockets, and well irrigated to stop turf from drying out, especially on south-facing slopes.

Right: Through the trees to the grass amphitheatre at Great Fosters, Surrey. Opposite bottom: View from atop the six-metre-high grass amphitheatre. Immediately behind runs the M25. The amphitheatre acts as a terminus to the main avenue and, along with an earth bund, greatly reduces noise from the motorway.

➔ When to work: golden rules are to work with soils only in dry weather and handle them as little as possible.

➔ Storing soil: topsoil removed for re-use after the landform has been created needs careful handling and storage. Store turf, topsoil and subsoil separately and for as short a period of time as possible — certainly no longer than two weeks.

➔ Soil structure: maintenance of good soil structure in the topsoil is absolutely key to keeping the soil well aerated and establishing and maintaining the plantings.

➔ Laying turf: on steep terraces turf should be laid vertically like stair carpets, rather than horizontally, which can allow the turfs to slip.

Maintenance

➔ Sheep: these grazers are a great maintenance team, but they tend to get set in their ways and can wear scarring tracks along the habitual crocodile paths.

➔ Mowing: if banks are to be mown, it is much easier at slopes of less than one in two. Flymos can be used on one in one slopes, but electric ones are easier as combustion engines can flood and are heavy.

➔ Shears: in small gardens and on sculptures, hand shears are the most precise.

Additional construction notes by Dr Sheila Ross, environmental consultant, AMEC
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debutante circuit, celebrated by Noel Coward in *Private Lives*. The hotel and elaborate Arts and Crafts gardens have been lovingly restored, but the M25 amputated the last third of the axial avenue and exposed the Grade I building to the noise and fumes of the congested motorway. After years of 'discussions' with the Highways Agency and acquisition of the neighbouring fields, we were able to find the funds to build half a mile of protective earth bunds and a six-metre-high grass amphitheatre as the new terminus to the avenue. The sculptural landform cuts out the noise and sight of the motorway and gives a focal end to the axial vista. To celebrate the opening we held a concert with a string quartet, just 25 metres from the busiest motorway in the country. The acoustics were perfect.

The owners of Great Fosters continue to commission modern gardens to fit within the eclectic pattern of the place. We are currently working on a final pair of enclosed gardens beside the moat. An oval viewing mound on one side of the axial path spirals down to an oval dell on the other, linked by a rill of water fed from the moat.

Transforming an urban space

Land sculpting can even work in tight urban spaces. At Hyde Park Corner we are emphasising the natural fall in levels by forming a sweeping, south-facing grass bowl. The northeastern corner is being raised by a further 2.5 metres, while the southwestern corner (nearly 12 metres lower) is held by a 35-metre-long water wall. The water wall has been built by the Australian Government as a war memorial and the upper bowl is being created by the New Zealand Government with bronze sculptures in the pattern of the Southern Cross for their own memorial. With the new pedestrian crossings, the combined effect will be to turn

Hyde Park Corner from an impenetrable traffic roundabout into a peaceful and protected fulcrum in the middle of the Royal Parks.

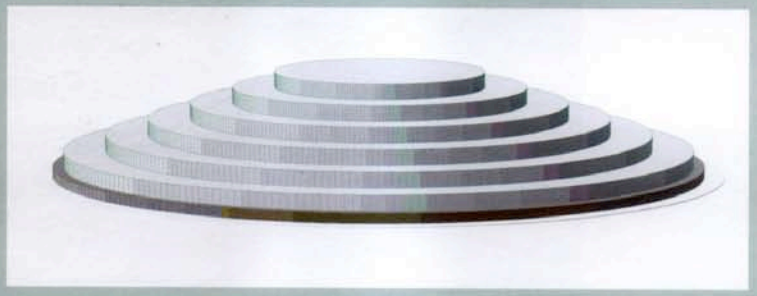
Making an entrance

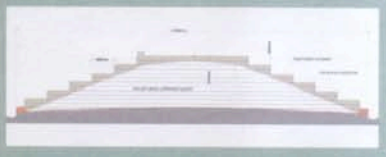
The courtyard of the old County Hall, London has been similarly transformed. It was a hard and austere urban space. The courtyard had been covered in asphalt and used as a car park by the Greater London Council. In its reincarnation as a five-star hotel, it needed a formal entrance and set-down circle. Weight restrictions, turning circles and a miserable microclimate left little room for manoeuvre, but the place desperately needed something green, fresh and cheerful. We came up with a kind of ziggurat of turf lit by a central light suspended over the courtyard. The key to all landform projects is to work closely with the people who will help you to build it. At County Hall we worked with Mark Fane, who devised a lightweight system of polystyrene 'subsoil' with growth mats for vertical grass faces. Regular shade-tolerant turf could be laid onto special light soil mix on the flat surfaces, but the vertical sides had to be sown straight into the growth mats. The structure was built layer by layer, like a wedding cake, and installed over a weekend. The sculpture was watered and fertilised by hand and cut by shears — high maintenance and not cheap, but it has to look good all the time. In spring last year the sculpture was refurbished by David Barnes of Harlequin Landscapes using a system of rockwool and grassfelt with rhizomous tall fescue developed by Lindum Seeded Turf.

Small gardens

Even in small suburban gardens land sculpting can work. Our studio garden in Richmond was a handy experiment. The main use of the garden tends to spill out from the first floor living room onto the roof terrace where there is a big glass table, troughs for growing vegetables and views into Richmond Park. The garden below is mostly gazed over rather than used and it seemed unnecessary to stick with the standard flat lawn. Leaning over the roof garden rail and looking out to the horizon, I played with the idea of turning the garden into sea. The grass area is only 5x10 metres and, with just 300mm changes in elevation, the flat lawn was changed into a series of waves. A friendly contractor dumped off some poor, sandy 'topsoil' and, just using a shovel, rake and boards, I was able to mould it into waves with sharp one in one scarps and gentle one in ten dips.

The scarps are differentiated from the dips by alternating species of grass. Yorkshire fog (*Holcus lanatus*) is seeded onto the steep slopes and allowed to grow long and flower to produce creamy waves





Above and left top: Two details of the old County Hall landform showing a cross section and three-dimensional representation. The interior of the stepped landform consists of lightweight polystyrene in a cellular confinement system. Over this is an impermeable membrane supporting a soil substrate onto which grass was established. Six 300mm-high and 800mm-deep turf treads make up the structure, which has a total diameter of 12.4m and height of 2.1m.

Above: Before and after at the old County Hall, London. Two standard trees by the entrance to the building appear to sprout from the landform.

Suggested wild flower seed mixes for landforms

For a looser, natural effect, wild flowers can work well with a land-sculpting project. Such seed mixes must include a selection of annual species to help bind the soil from the start. Seed should be sown shallowly in early spring and kept moist. Beware of heavy rain — create rills parallel to the slope and firm in seed. Position planted species higher up a slope so seed drop colonises down the slope and falls into rills. Cut the plants back hard in autumn once seed has set.

The following species have been selected to include ones that will bind the soil. Included are simple mixes for colourful effects. Annuals give colour in year one, with perennials and biennials flowering the following year. Some species may be slower to show, but cornfield annuals will re-colonise open ground the following year if the soil is not too compacted or heavy and seed is allowed to fall.

Annual species for sowing at 5g/m²:

Corn chamomile *(Anthemis arvensis)*
Corn poppy *(Papaver rhoeas)*
Cornflower *(Centaurea cyanus)*

Biennial and perennial mixes to be sown at the same time as the annuals:

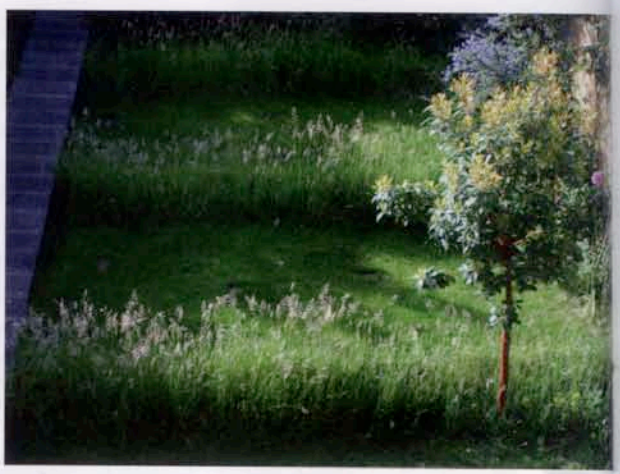
Mix 1 (short species) — sow at 2g/m². No grass species required.
Lady's bedstraw *(Galium verum)*
Birdsfoot trefoil *(Lotus corniculatus)*
Fox and cubs *(Hieracium aurantiacum)*

Mix 2 (short species) — sow at 5g/m². Grass species also required.
Selfheal *(Prunella vulgaris)*
Betony *(Stachys officinalis)* — *best planted as young plants, as slow from seed*
Cowslip *(Primula veris)*

Mix 3 (tall species) — sow at 2g/m². No grass species required.
Oxeye daisy *(Leucanthemum vulgare)*
Viper's bugloss *(Echium vulgare)*
Kidney vetch *(Anthyllis vulneraria)*

Mix 4 (tall species) — sow at 5g/m². Grass species also required.
Teasel *(Dipsacus fullonum)*
Wild carrot *(Daucus carota)*
Chicory *(Cichorium intybus)*

By Grant Luscombe, chief executive, Landlife.
Website: www.landlife.org.uk



Right top: Yorkshire Fog on the steep rises creates foaming 'waves' at the author's studio in Richmond, London. The crests are lit at night. Right bottom: Sunken spiral landform at the author's home in Hampshire. Shadows cast in the early morning sun accentuate subtle contours. Frost adds further sparkle to the scene.

that move with the wind and contrast with the smooth green planes of regular mown mixed grass. Lights hidden under the boardwalk pick out the crests at night.

Sculpting the land is an ancient and very British tradition. It is one of the most dramatic and yet playful ways of designing in the landscape — and enormous fun. The subtlety of form, often hidden in flat light, can become tremendously powerful at dawn or dusk or in frost and low mist. Combined with different patterns of grasses, grazing or mowing, the scope for imaginative design is utterly absorbing.

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Further information

- Further details of the garden at Great Fosters can be found at: *www.greatfosters.co.uk/docs/gardens*
- Lindum Seeded Turf supplies 'Grassfelt', a soil-less grass grown in biodegradable felt to make a pliable turf useful for carpeting landforms with unusual contours. Website: *www.turf.co.uk*
- Landlife is a charity working for landscape-scale approaches to improving the environment. It sells wild flower seed mixes and plants and can recommend on specific situations and varieties suitable for landforms. For a mail-order catalogue visit the website: *www.wildflower.org.uk*