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VIEW FROM THE TOP

Roof gardens in
the UK and Paris

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RAISING THE ROOF

Roof gardens are an increasingly popular way of maximising our exterior space, as well as creating important green living environments in urban areas. However, the prospect of designing and building one – with all the associated pitfalls – can be daunting for designers. **Emma Reuss** asked four designers experienced in the art of construction at height for their best advice



Photo Marianne Majorus



Tell us what limitations designers can face when designing on top of buildings?

Andrew Fisher-Tomlin FSGD: The wind. Not just because of its desiccating effect on plants but also its impact when using the space.

Mathew Bell MSGD: Weight-loading capacity – it's vital to use a structural engineer to define limitations which can affect the size of planters, the amount of soil medium used, the type of plants and, of course, any structures.

Douglas Coltart MSGD: When creating a garden on a listed building, there are often limitations about things being visible or that could interfere with the overall look of the building. It's also important to consider the view outwards.

Sara Jane Rothwell MSGD: Waterproofing, wind and weight-loading, not to mention access considerations! Allow for airflow through vertical structures: gaps between fencing battens, holes in shade sails

and metal panels or choosing hedging over solid screening. All permit passage of air and minimise wind turbulence within the space.

Which materials do you tend to use and why?

SJR: Each terrace is different but timber decking is straightforward to install and relatively lightweight, especially Western Red Cedar. It also allows for easy levelling, with the fall for drainage hidden beneath.

AFT: The advent of systems to suspend paving and hide cabling and irrigation pipes beneath them means there is more choice now. Advances in LED lighting technology have also expanded design options.

MB: Decking, resin gravel and lawns are my favourite features to include.

And plants?

SJR: Multi-stem *Betula utilis* var. *jacquemontii* underplanted with *Erigeron karvinskianus*. I love soft perennial planting and using grasses and penstemons, also olive trees →



Mathew Bell MSGD

Mathew says that roof garden design makes up the bulk of his work. He has many years of experience designing both at ground level and above and is a RHS Chelsea Gold medalist.



Douglas Coltart MSGD

Douglas has extensive experience designing gardens both in the UK and abroad and serves on the SGD adjudication panel. Douglas's garden design company is based in Ayrshire



Andrew Fisher-Tomlin FSGD

Andrew is one of our leading designers, a Fellow and former Chairman of the Society of Garden Designers and Director of the London College of Garden Design.



Sara Jane Rothwell MSGD

Sara Jane hasn't paused for breath since starting her London garden design business 10 years ago. She is experienced in corporate and domestic roof garden design.

LEFT Sara Jane Rothwell's design features views of the City of London

Catch/Compose Photography



and herbs – anything that can stand the exposure. I find *Phyllostachys bisetata* the most wind-tolerant bamboo.

MB: Plants that grow in alpine conditions are an obvious choice, but woody herbs grow well in exposed areas and lavender is always a favourite. In sheltered situations one can use more tender things; on one London terrace 10 floors up, I have a lemon tree and an agave which is 2m tall. It is east-facing, sheltered on two sides by walls, so it gets some sun but, more importantly, very little wind. In very windy sites, fine-leaved plants, such as grasses, are more resistant to wind-damage.

AFT: Mediterranean plants do well because of the drying conditions, but conifers and box are prone to wind-burn so are unsuitable except in the most sheltered situations.

What system/media do you use to plant?

DC: Planters need to be lined, packed with aggregate like leca which is then covered with a porous geotextile membrane before the actual planting media is added – normally a lightweight compost. Mulch after planting to retain moisture.

SJR: To anchor trees I use the deadman fixing system. The rootball is bolted either to the deck itself, the bearing timbers or onto railway sleepers underneath it, which keeps all the unsightly tethers out of sight. I tend to mix the compost with



hydroleca to make it more lightweight.

MB: I often use powder-coated aluminium pots which are light and don't rust. If I'm building a flowerbed, I include a heavy-duty drainage mat with a geotextile barrier to prevent soil leakage.

coupled with rainwater collection mulching with gravel or stones (blows away) all help.

SJR: I use rainwater hog tanks where possible. These are long and flat and can be installed against a wall and hidden behind screen planting.

Do you always incorporate an automatic irrigation system?

AFT: I try not to use artificial irrigation because it makes for weak plants. Use the right plants and you don't need it. Plus water supply is often an issue.

DC: Only when it involves narrow small beds – we're lucky in Scotland in terms of rainfall.

MB: I always install automatic irrigation systems. It means the plants never suffer in drought periods and, as most of my gardens are client-entertaining areas, it is important that everything looks its best. Obviously there are ways to conserve water, using drought-tolerant plants, incorporating water-retaining gel into the planting medium, a leaky hose system

Can you share your most stressful situation with us?

MB: I once ordered a tree that, when it arrived, was too big to go in the lift. The lift engineers put the tree on top of the lift and took it up that way. I'm not sure this would pass the rigours of pressure health and safety requirements!

DC: If a structural engineer won't sign weight limits (which sometimes happen with older properties), the only way to prove that a roof can take the weight is by destructive testing. Bulk tonne bags of



FROM LEFT Sculpture in Douglas View Lanark; the Ark Roof above a 19th century mill; Andrew Tomlin's roof garden at the Education Centre in Glasgow Square



"I once had to close the main route around Regent's Park in London to accommodate a crane to lift hefty items onto a roof. We had a two-hour time-slot, which tends to focus one on the task in hand!"

Andrew Fisher-Tomlin

Do you have any final words of wisdom?

SJR: Beware water's tendency to pool around the base of planters. Sitting planters on the decking bearers below and decking up to them to prevent this happening.

AFT: Don't be afraid of designing roof gardens. Get advice and have a good engineer and surveyor on hand. Make sure your contractor understands the realities of access and health and safety.

DC: Make sure the client is aware that roof gardens can cost much more than a similar garden built at ground level (add a third at least to build cost), but don't scare them too much by telling them what can go wrong. Though make sure you have covered yourself so you don't have to ring the insurers.

Which of your roof gardens are you most proud of?

AFT: All of them! But especially really

large projects such as a 2 acre roof garden that includes water built on top of an electricity substation, which I think was a feat of engineering and resolved not by us but by our specialist contractors.

DC: The New Lanark roof garden, the largest roof garden open to the public in Scotland, on the roof of a five-storey grade A-listed 18th century cotton mill. It has been designed to be removed entirely and returned to its previous state should this ever be required.

SJR: A small but perfectly-formed (in my opinion) roof terrace that incorporates views of Christ Church, Spitalfields and the Gherkin.

MB: The IPC Media terrace on the south bank of the River Thames in London. It is used by company staff as an area in which to relax and eat. ○

BELOW Elevation for Sarah Jane Rothwell's London roof garden pictured on page 24

