LESS HARD, MORE SOFT

Less hard and more soft has the dual benefits of reducing carbon impacts associated with hard landscape design and increasing carbon benefits associated with soft landscape design.

Hard Landscape v Soft Landscape

Materials for hard landscape design require extraction, processing, manufacture, construction and deconstruction, which accumulate carbon impacts. While materials for soft landscape design come with a typically lower carbon impact, there is considerable scope to further reduce these impacts through low carbon specification. Soft landscapes also absorb carbon, such that over time these carbon benefits can offset the carbon impacts associated with the implementation of the hard and soft landscapes.

0 Strategic Definition

1 Preparation and Briefing

Minimise hard landscapes through committing to a softer style of landscape design, providing shared surfaces and considering nature-based alternatives to surfaces and structures.

2 Concept Design

3 Spatial Coordination **4 Technical Design**

Integrate nature-based solutions to avoid hard landscapes and reduce volume of material through reduced extents and through reduced dimensions in technical detailing, especially in underground construction, where possible.

5 Construction **6 Handover**

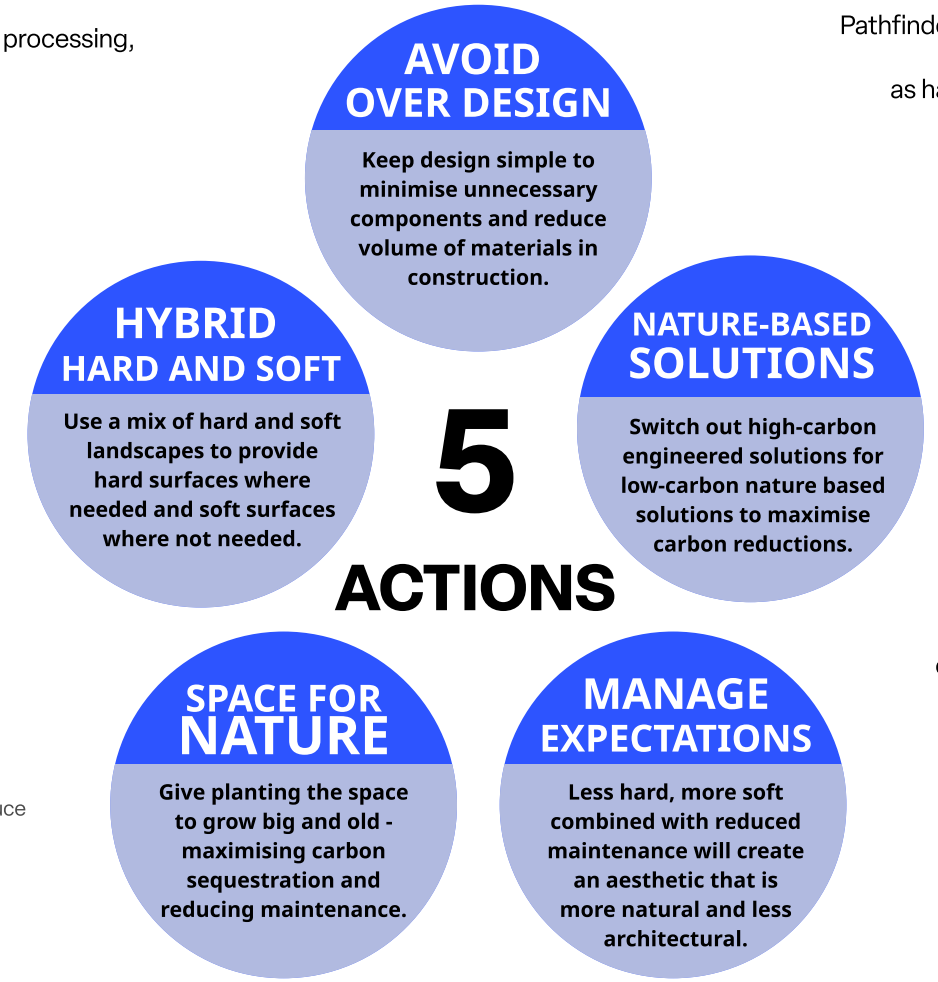
Minimise waste of materials, energy and water through efficient construction processes.

7 Use

Adapt to opportunities to further reduce hard and increase soft or move hard landscapes to more suitable locations.

8 End-of-life

Remove hard landscapes for reuse and recycling at the end-of-life and plan to increase soft landscapes to create a legacy landscape.



Measuring Carbon

Pathfinder, Carbon Conscious App and Elemental are tools for carbon calculation that take into account soft as well as hard landscape design. The premise of Pathfinder is to reduce the time it takes a project to become carbon neutral or 'Climate Positive' by encouraging less hard and more soft landscaped areas. Pathfinder is free and easy to use, making it well-suited for working out trade offs between hard and soft landscapes at both the early and design stages of a project. Carbon Conscious App also takes into account the carbon sequestration of soft landscapes and, along with Elemental, all three tools include the carbon impacts of the construction of soft landscapes.

A range of tools are designed for projects that comprise predominantly soft landscapes with all calculating carbon sequestration; including i-Tree Eco focussing on tree stock; the UK Woodland Carbon Code (WCC) Carbon Calculator focussing on woodland creation; and Nature Insights focussing on habitat typologies and nature-based solutions.

Carbon Data and Tools for Hard and Soft Calculation:

Pathfinder
Elemental
Carbon Conscious App
i-Tree Eco
UK WCC - Carbon Calculator
NatureInsight

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Minimising Hard Landscape Design

The Mitigation Hierarchy enables the minimisation of hard landscaping in the following ways.

Avoid
Are the hard components of the project necessary? Is it possible to deliver the project without them? For example, nature-based solutions could be used to perform the functions of hard components such as slope stabilisation or flood mitigation.

Reduce
Is there scope to reduce the number of hard components, the extent of hard landscape and the volume of materials in the design and specification? Landscape projects can often be over designed, and scope exists to reduce the extent and volume of hard landscape whilst also providing cost savings.

Retain, Reuse, Repair or Recycle
Are there existing hard components and landscapes on site that can be retained, reused, repaired or recycled? Retaining and reusing existing hard landscapes will notably reduce carbon impacts and repairing and recycling will require more input but will still typically result in a net reduction.

Maximising Soft Landscape Design

Maximising soft landscape can be achieved through maximising the area dedicated to soft landscape and increasing the volume of vegetation through species selection.

The reduction in hard landscape will free more space for soft landscape and spatial coordination will need to consider which spaces have capacity to allow vegetation to grow big.

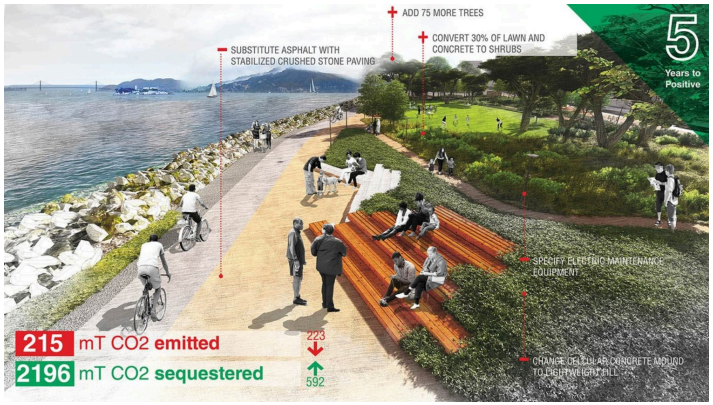
Matching species with soils, aspect, slope and microclimate, selecting native species of local providence, ensuring a mixture with fast growing nurse and slow growing legacy species, factoring in climate and disease resilience and creating symbiotic plant communities, will all help maximise plant biomass.

A low carbon landscape will require low level maintenance. This objective should guide the design, for example with fewer areas of amenity grass to mow and larger areas of lower maintenance woodland or wetland.

Expectations of Landscape Design

There is an expectation for landscape design to look neat and well managed, especially in urban contexts where spaces are often limited in extent and closely associated with the materiality of the surrounding architecture.

The aesthetic of a low carbon landscape will be shaped by the objectives to minimise hard landscape, maximise soft landscape, allow vegetation to grow big, reduce maintenance operations and encourage some degree of self-sustenance. If all these objectives are implemented, this will lead to landscape designs that appear less managed and more natural.



Links to information on hard and soft landscaping:
Design Toolkit — Tips And Tricks — Climate Positive Design
Landscape Design for Carbon Sequestration | ASLA 2020 Student Awards
Landscape Journal - Autumn 2020: Greener Recovery by Landscape, the journal of the Landscape Institute - Issuu