

Introducing a modular
load supporting system that
integrates into any development
to protect existing trees.

ROOTBRIDGE

Green Grid Systems

Mapping a Greener Future for Construction



GREEN GRID SYSTEMS
INNOVATIVE TREE ROOT PROTECTION



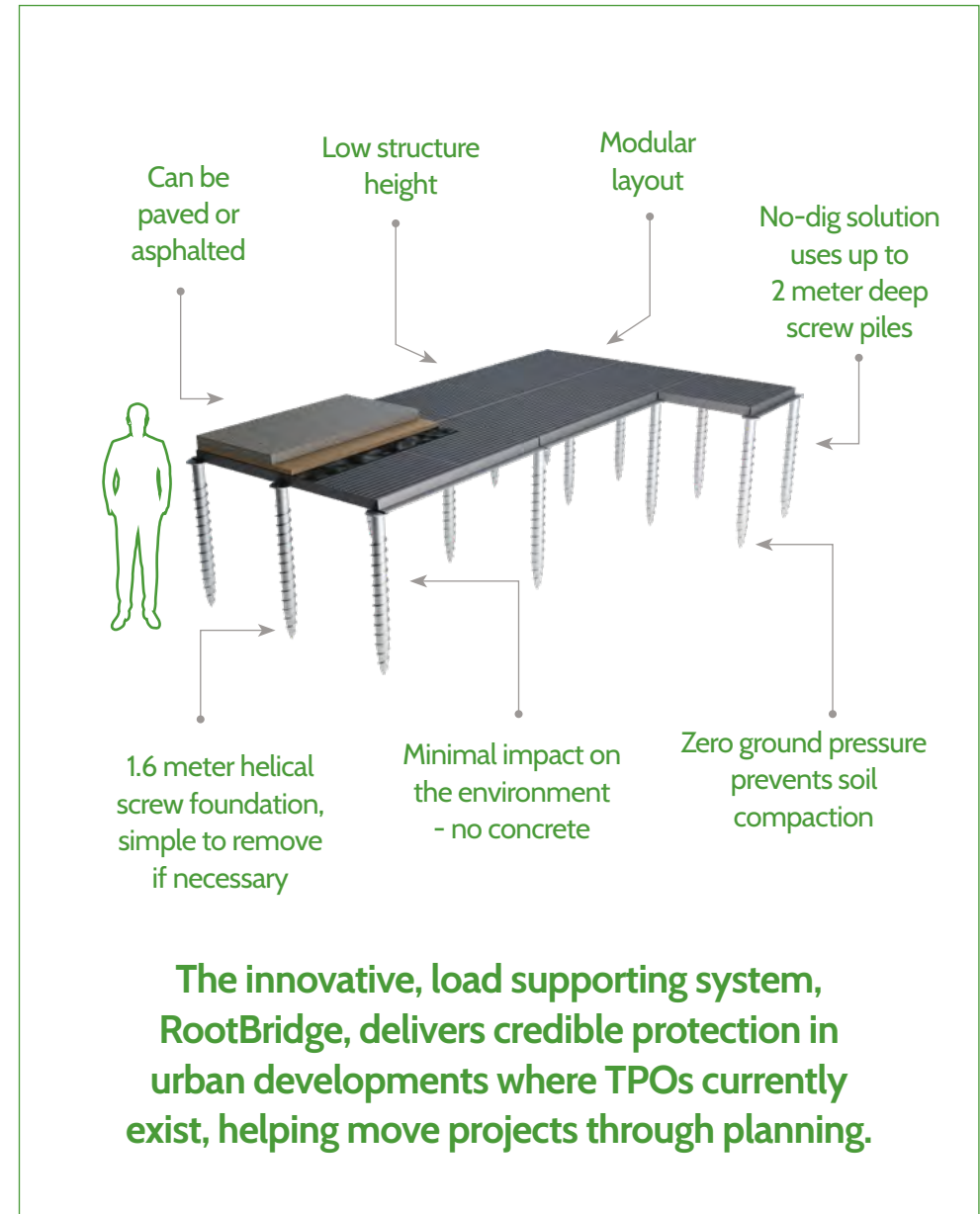


Enhance value and reduce liability

Green Grid Systems place tree preservation at the heart of responsible construction by providing a low impact, no dig solution, no concrete solution that prevents soil compaction.

Consisting of an adaptable modular steel lattice construction that is supported on robust foundation screws. A network of piles is typically fixed two meters into the substrate and carefully positioned between the main roots in the RPA.

With a low structure height, the system can be implemented with minimal impact. Subsequent loads of up to 57kN are then absorbed by the structure rather than the roots.



Typical applications:

- Carparks
- Walkways
- Driveways
- Access roads
- Ramping onto a geocellular system





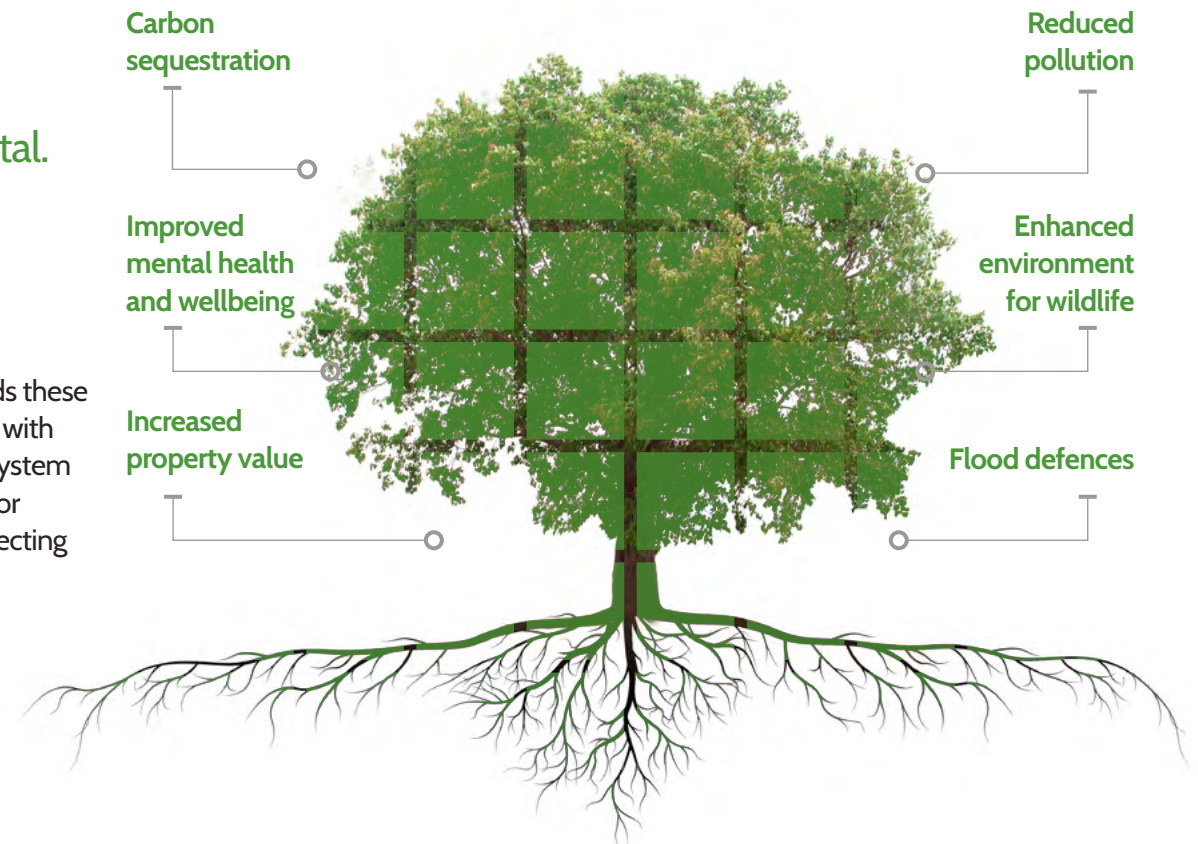
Laying the foundation for tree preservation

Appreciating the value of trees and understanding the long-term benefits that they bring to the environment and the local community is fundamental. The risk of soil compaction poses a real threat to the longevity of trees, which in turn can have serious impact on your construction project.

Any urban site furnished with mature trees brings enormous environmental benefits, the trees rightly deserve protection. Systems like CAVAT and iTree have helped to calculate the asset value of trees. Failure to comply with TPO requirements can be incredibly costly; proven negligence can land developers with substantial fines.

Implementing RootBridge avoids these issues, providing peace of mind with its easy to install solution. Our system uniquely satisfies the demand for housing and services while protecting the high amenity value of trees.

Trees are an essential natural asset. Their presence in urban areas is priceless.





Pedestrian Duty - SS7.5

Designed for use in pedestrianised areas and to create pedestrian access across otherwise underutilised space in the RPA. This variant is the thinnest option, adding just 65mm to the existing ground level. It can be finished with heel-safe mesh grids for a contemporary look or can be overlaid with paving or asphalt.

Possible scenarios are as follows:

- Walkways between trees
- Around trees in paved areas such as city centres
- Use in pavements
- Benches and seating



Depth	65mm
Configuration	1m x 1m sections
Loading capacity	up to 3.5kN or bespoke
Surface finish	Heel-safe mesh, pave over or resin bound, timber benching

Light Duty - SS15

Designed for light traffic of vehicles up to 4 ton. This system is primarily used for parking spaces and driveways. This version is the most cost effective, balancing capability and price.

Possible scenarios are as follows:

- Car only access roads between trees
- Car parking spaces
- Pedestrianised areas that need vehicular capability



Depth	85mm
Configuration	1m x 1m sections
Loading Capacity	15kN point load / 3 ton axle load
Surface Finish	Heel-safe mesh or pave over



Heavy Duty - SS50

Designed to take a point load of 50kN (approx. 5 ton). This makes it best suited to access roadways through trees or in pedestrianised areas that require emergency vehicle access.

Possible scenarios are as follows:

- Access roads between trees
- Pedestrianised areas requiring emergency vehicle access



Extra Heavy Duty - SS57

The heaviest variant available, able to take axle loading vehicles of up to 11.5 ton. This capability makes it suitable for articulated lorries up to 40 ton.

Possible scenarios are as follows:

- All heavy duty access requirements
- Access roads between trees
- Site entrances



Depth	111mm
Configuration	1m x 1m sections
Loading capacity	50kN point load / 10 ton axle load
Surface finish	Pave or Asphalt over

Depth	112mm
Configuration	1m x 1m sections
Loading capacity	57kN point load / 11.5 ton axle load
Surface finish	Pave or Asphalt over



Technical data

Grid Finishes

Standard 30 x 30mm Mesh

Heel-safe 11 x 33mm Mesh

The system is finished with press-lock grating panels. The 30x30mm mesh grids can be covered with a membrane, and an extra surface finish such as asphalt can be laid on top. Alternatively, heel-safe grating can be supplied with anti-slip serrations as the final finish.

Compliance information:

- BS5837:2012 Trees in relation to design, demolition, and construction
- Eurocode 1: BE EN 1991-1-1:2002 Actions on structures
- Eurocode 3: BS EN 1993-1-1:2005 Design of steel structures
- BS 4592-1:2006 Industrial type flooring and stair treads





Case Studies

Innovation tree protection in action

York development access road

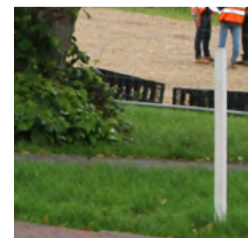
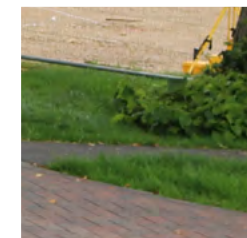
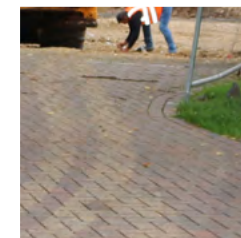
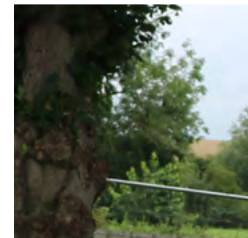
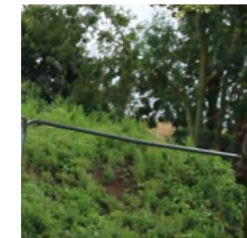
RB heavy duty used to create a new access road for nine dwellings and a public house in York

At this development in Yorkshire, planning constraints called for the protection of three mature and established lime trees. The project required a heavy duty solution where the new access roads connected the existing highway. It consists of two 10m sections at a slight gradient into the site.

Due to the gradient, a pivot system was used which allows flexible adjustment in the final angle (based on the pile heights) and contributes to greater flexibility in the pile placement.

Consisting of 148 piles with an approx. combined weight of 10 ton, the entire structure was raised off of the ground to ensure there is no compaction in the RPA. This robust system of anchoring ensures the roadway will not be pushed by growing tree roots. Following the install, the steel frame was overlaid with block paving. Curved edging was supplied to support the paving and provide the form for the finished road.

Here are projects where RootBridge has been successfully integrated in the UK. You can find further case studies online - www.greengridsystems.com/case-studies



RESULTS

The final structure is completely porous - water can flow between the joints in the paving, through the grit base and the membrane, then out through the mesh grids that sit on the beams. This ensures the construction has minimal impact on the trees and their environment.



Case Studies

Innovation tree protection in action

New Driveway for Housing Development

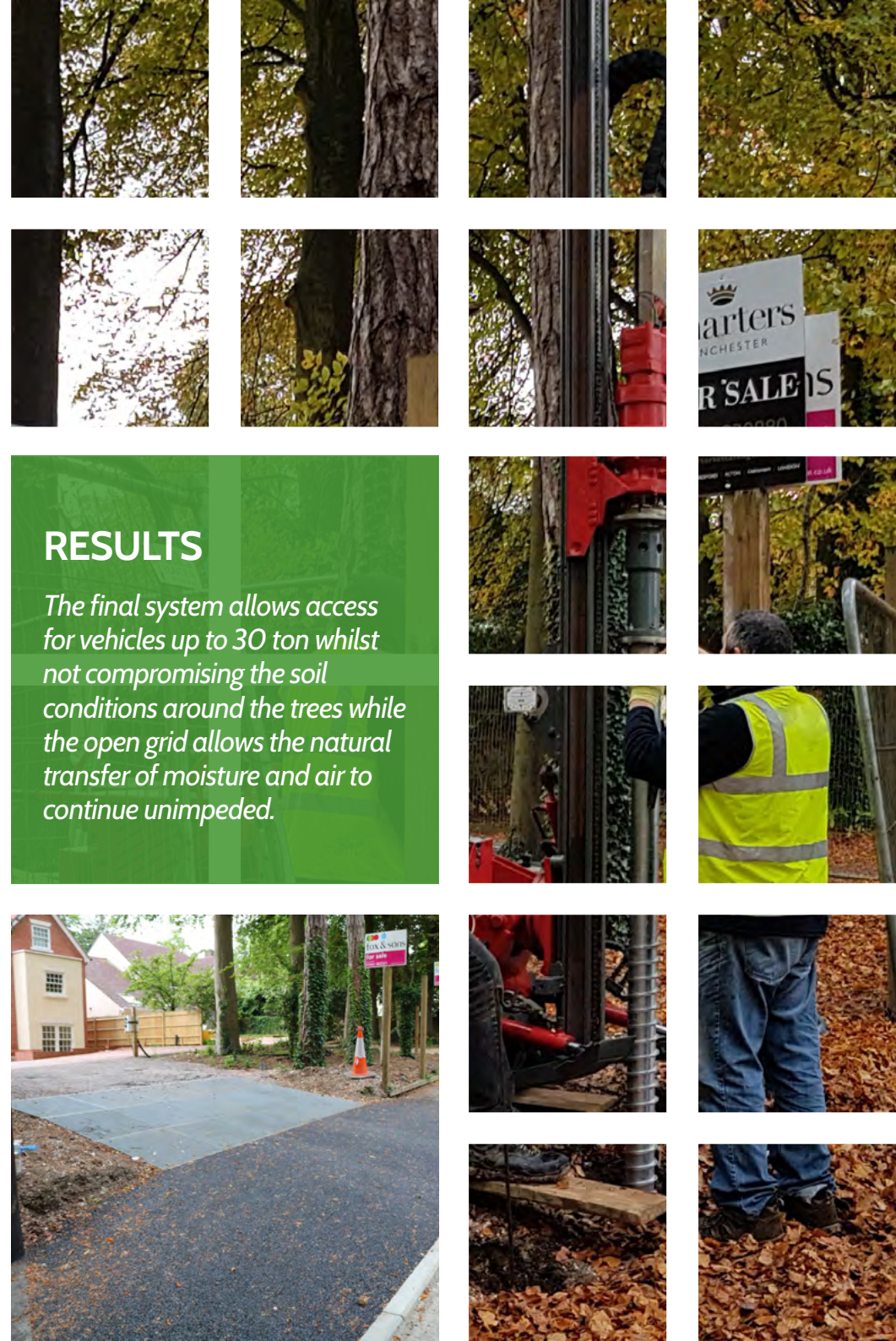
RB heavy duty used to create a driveway for five dwellings at a project in Winchester, Hampshire.

The basis of this project was a driveway through the RPA – this being the access granted at planning stage to the five new dwellings onsite. Our involvement didn't start until the houses were completed, it was at this point they found that their original plan to use a concrete slab set on concrete piles wouldn't work. There is a gradient across two planes where the driveway slopes up from the road, and we were able to modify out heavy duty system to accommodate this – something that wasn't achievable with the concrete option they had originally chosen.

The final solution consisted of our heavy duty system, which is rated to take vehicles up to 30 ton, with stub legs set at specific angles and heights to connect to the piles and manage the gradients.

The system in this project was left as a mesh finish at the client's request, with a heel friendly mesh size and anti-slip serrations. The remaining RPA area between the system and the rest of the driveway was finished with 200mm deep geocells. Temporary ground protection was used onsite when tracking the machine through to install the screws. These were 2100mm long to meet the high load requirement of the system and wound into the underlying chalk.

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RESULTS

The final system allows access for vehicles up to 30 ton whilst not compromising the soil conditions around the trees while the open grid allows the natural transfer of moisture and air to continue unimpeded.



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