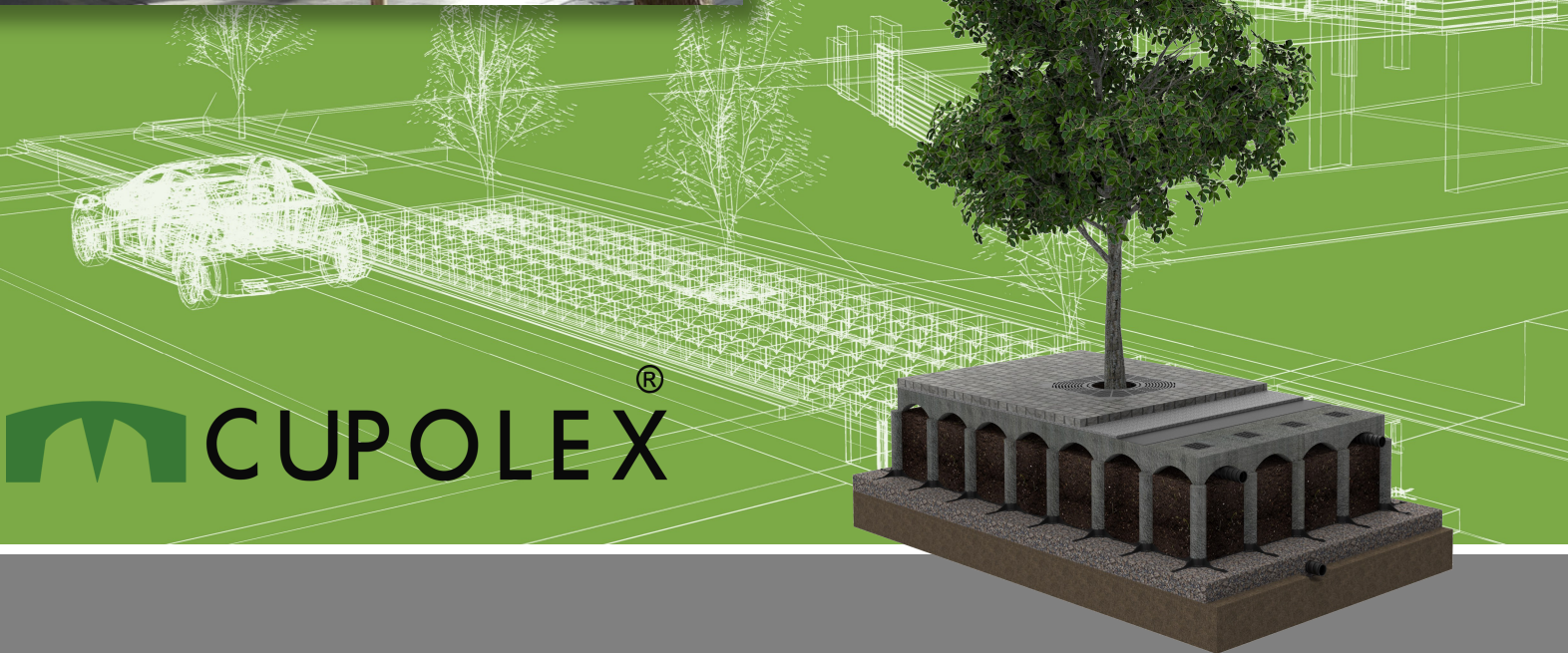




# Engineered Concrete Soil Cell Pavements

**Urban Resilience**  
**Resilient Infrastructure**  
**Sustainable Construction**



 **CUPOLEX**®



# CUPOLEX® Concrete Soil Cell Pavements

A CUPOLEX® concrete cast in place Soil Cell Pavement is a green infrastructure facility designed to provide stormwater management benefits equivalent to bio-retention or bio-infiltration. The void of variable depths that the CUPOLEX® Soil Cell concrete pavement structure provides is filled with filtration soil media. Stormwater is distributed and collected within the cell network and an underdrain is connected to a discharge point or storm sewer. CUPOLEX® Concrete Soil Cells Pavements can also be designed as Hybrid Systems when combined with CUPOLEX® Stormwater Capturing Concrete Pavements and structures. This cast in place concrete stormwater management system is designed with an integrated stormwater capture, retention, infiltration and treatment as a standalone system.

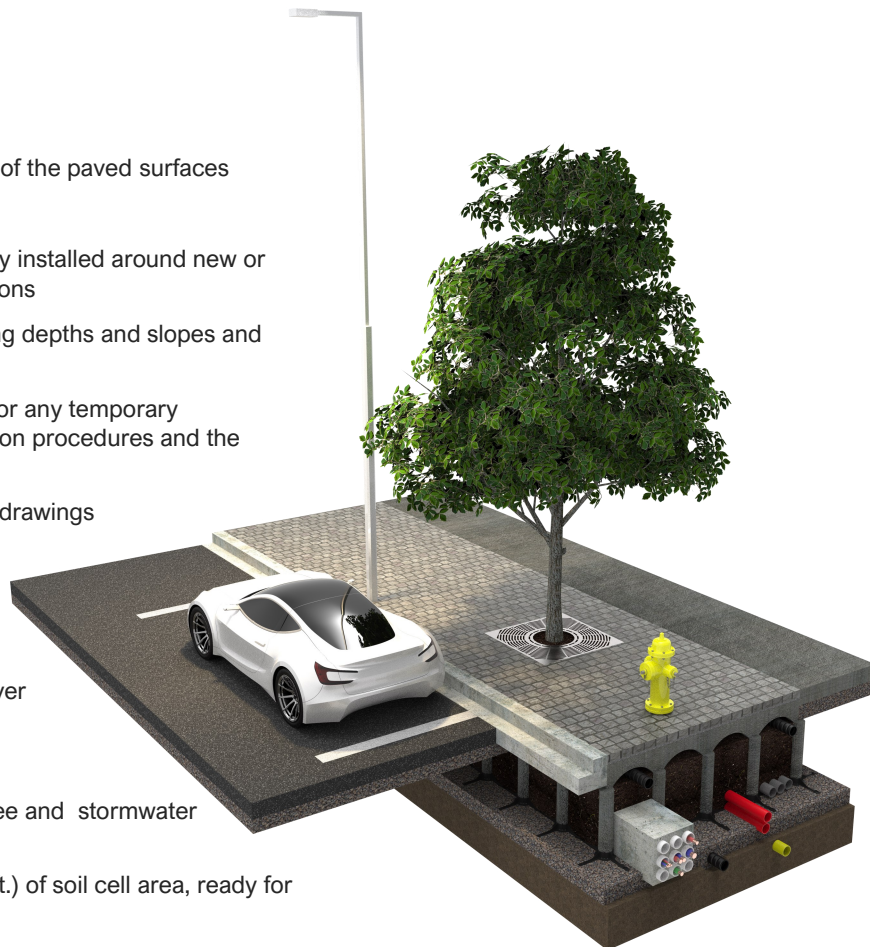
## APPLICATIONS

Parking Lots	Footpaths	Break-Out Zones
Streetscapes	Plazas & Medians	Medians
Roadways	Green Roofs	Shopping Centres

## Planting Trees in Pavements Made Easy

### FEATURES

- Designed to support any vehicular traffic loading
- Finished pavement is supported by concrete not plastic
- Trees do not compromise or damage the structural integrity of the paved surfaces
- Urban trees can grow and thrive in their urban setting
- Flexible for any dimension on plan or depth and can be easily installed around new or existing trees, underground utilities, and pavement penetrations
- CUPOLEX® soil cell pavements can be designed with varying depths and slopes and are available up to 2.0m (7ft)
- Resulting concrete pavement can be easily cut or modified for any temporary emergency or permanent repairs without impacting excavation procedures and the structural integrity of the soil cell pavement structure.
- Detailed simple repair procedures are included in all design drawings issued by CUPOLEX®
- Ease of installation of irrigation and water distribution systems
- CUPOLEX® Soil Cell pavements are concrete pavement structures and do not require any geotextile, gravel or fill cover
- Stamped engineered design drawings, construction training, inspections, and monitoring provided by CUPOLEX®
- Provides savings in time and materials compared to other tree and stormwater management systems
- Two unskilled labourers can assemble up to 40 m<sup>2</sup> (400 sq.ft.) of soil cell area, ready for concrete placement, in one hour
- Vented sub-slab void allows transfer of gases between soil and atmosphere

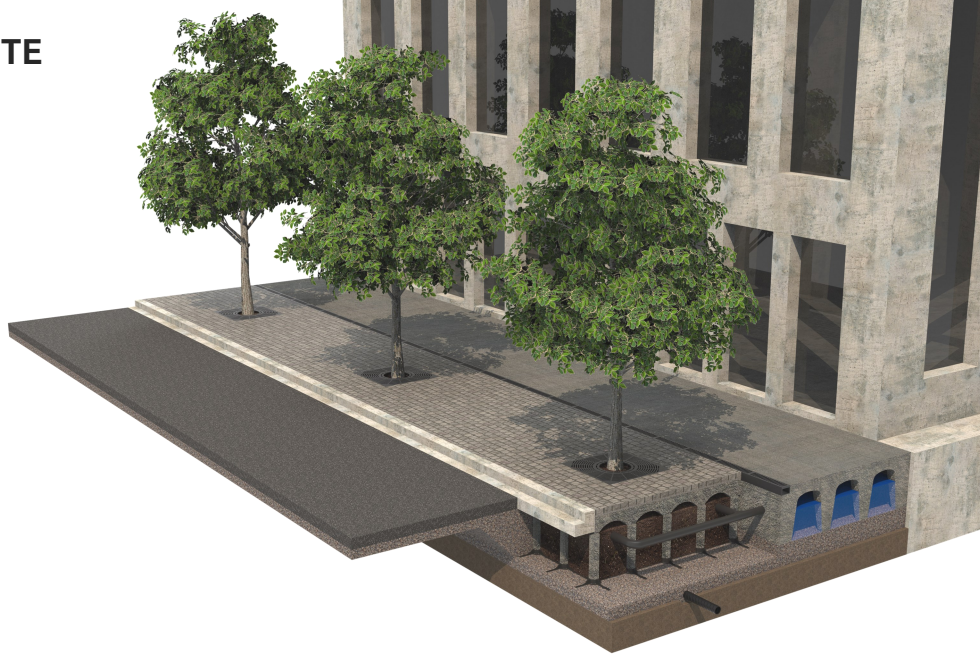




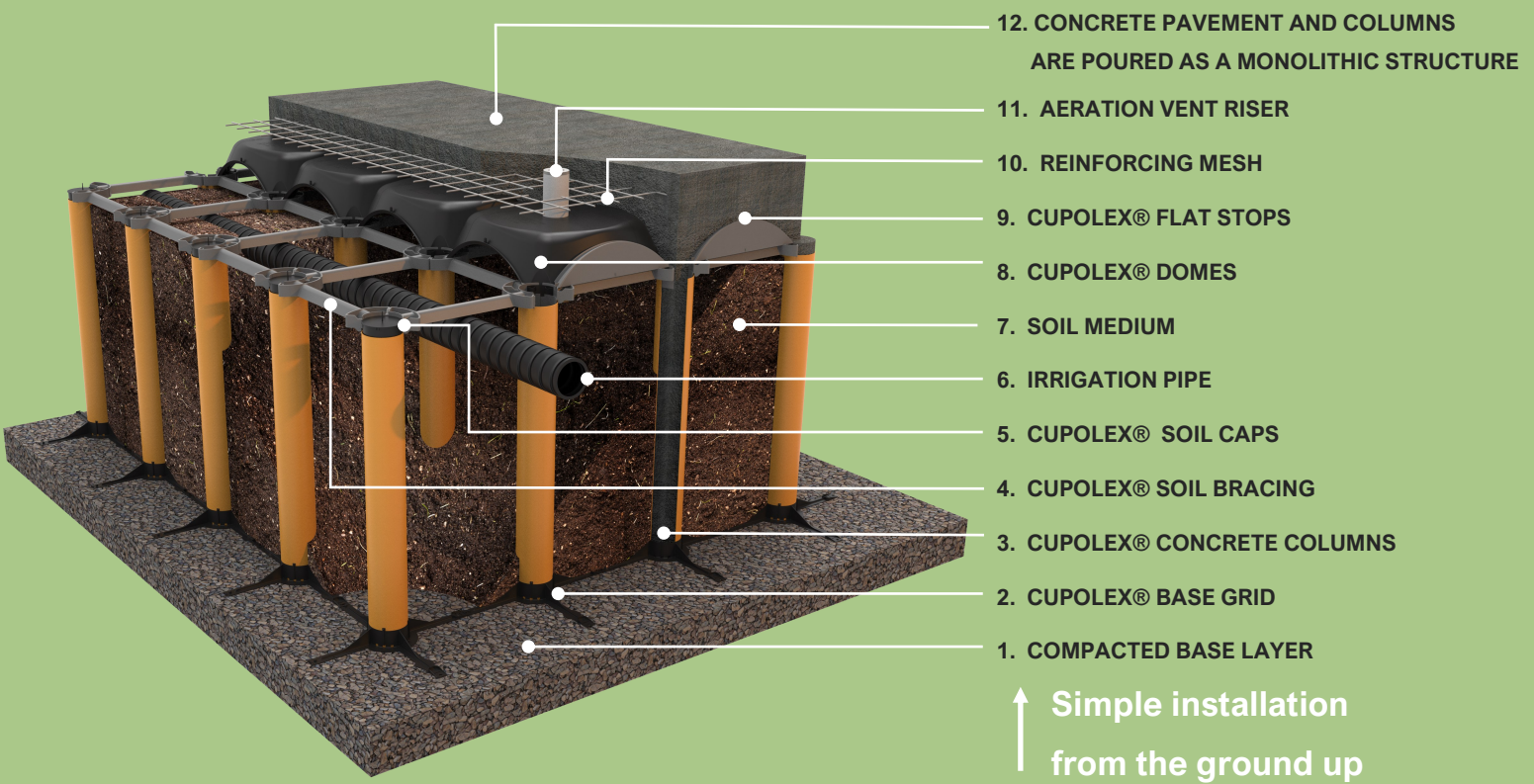
# RESULTING PRODUCT IS A CONCRETE SOIL CELL PAVEMENT STRUCTURE

CUPOLEX® Soil Cell Pavements are constructed by assembling the CUPOLEX® Soil Cell formwork. The CUPOLEX® soil cell formwork is supplied to contractors by Pontarolo Engineering and shipped directly to the project site or the contractor's yard from Pontarolo Engineering's manufacturing facilities. The CUPOLEX® soil cell forming system is installed by the contractor to form the elevated concrete cast in place pavement structure as to the design and specifications provided by Pontarolo Engineering.

The resulting product is an engineered concrete pavement structure capable of providing carrying capacities equivalent to conventional road pavements. The elevated CUPOLEX® soil cell pavement is supported by the matrix of concrete columns formed by the CUPOLEX® soil cell concrete forming system that are poured monolithically with the pavement. The paving loads are transferred vertically downward to the subbase below the planting soil layer, allowing the pavement to support high load-bearing capacities.



**Can be designed with integrated stormwater capture, retention, infiltration, and treatment process as a stand-alone system.**







## Converting Risk-Driving Impervious Spaces Into Resilient Assets

We identify areas where contemporary challenges call for improved collaborative green infrastructure & urban flood management

The CUPOLEX® Soil Cell system is a proprietary patented plastic concrete pavement forming system manufactured by Pontarolo Engineering Inc. The concrete Soil Cell forms are part of a design package provided by CUPOLEX®. CUPOLEX® engineers design the concrete soil cell pavements by sustainably engineering the geometry of concrete using CUPOLEX® structural dome methodology. On a site-specific basis, CUPOLEX® engineers select the type and size of CUPOLEX® Soil Cell forms necessary to meet the required soil volumes and that will provide the ultimate performance for your project. The forms are supplied to contractors by CUPOLEX® to assemble the planters and the concrete cast-in-place Soil Cell pavement, as to the design and specifications provided by the CUPOLEX® design engineers.

CUPOLEX® Soil Cell forms are custom made to meet your site specific requirements such as varying soil depths, weather, special accommodations for underground utilities, special requirements for delivery and logistics, supporting working-load capabilities and any special impact resistance during installation and placement of the concrete pavement.

### CUSTOMIZED DESIGN PACKAGE

- **Value engineering**  
CUPOLEX® engineers review each project, provide value engineering, and identify the type and size of CUPOLEX® Soil Cells for every project
- **Preliminary drawings**  
Design coordination, conceptual designs, sections and details provided to designers
- **Engineered design drawings**  
Issued for construction (IFC) and supported with FEA structural calculations, PE stamp, construction documents and specifications
- **CUPOLEX® installation shop drawings**  
Issued to contractor with detailed CUPOLEX® Soil Cell formwork installation procedures
- **On-site Support**  
Construction training and inspections, with completion statements and regulatory compliance reporting where required