



Silva Cells



Strata Cells



Sand Based Structural Soil



Gravel Based Structural Soil



Control



Each system had the same space.

Smiley / Bartlett Field Trials 2014/15

Plant growth response photos on 9/3 15

Smiley – Bartlett Field Trails

Testing the tree growth effectiveness of different load bearing soil options. Planted in August 2014, photos September 2015



Silva Cells

Unscreened clay loam/sand /compost.
Installed by James Urban.
2.503 cu yards soil prior to compaction.



Strata Cells

Unscreened clay loam/sand /compost.
Installed by Craig Melvin.
2.03 cu yards soil prior to compaction (23% less soil).
Significant soil settlement and required replanting trees.



Gravel Based
Structural Soil

Soil mixed to CU Soil specification.
Installed by Tom Smiley



Sand Based
Structural Soil

Soil Mix observed and approved by Bob Pine
To meet Pine/Swallow SBSS specification.

The UK Raft approach is a SBSS system with a load spreading structure on top.

Largest and smallest in each treatment

When using any of these options you should.....

Calculate the soil volume based on efficiency.

The following is a reasonable estimate:

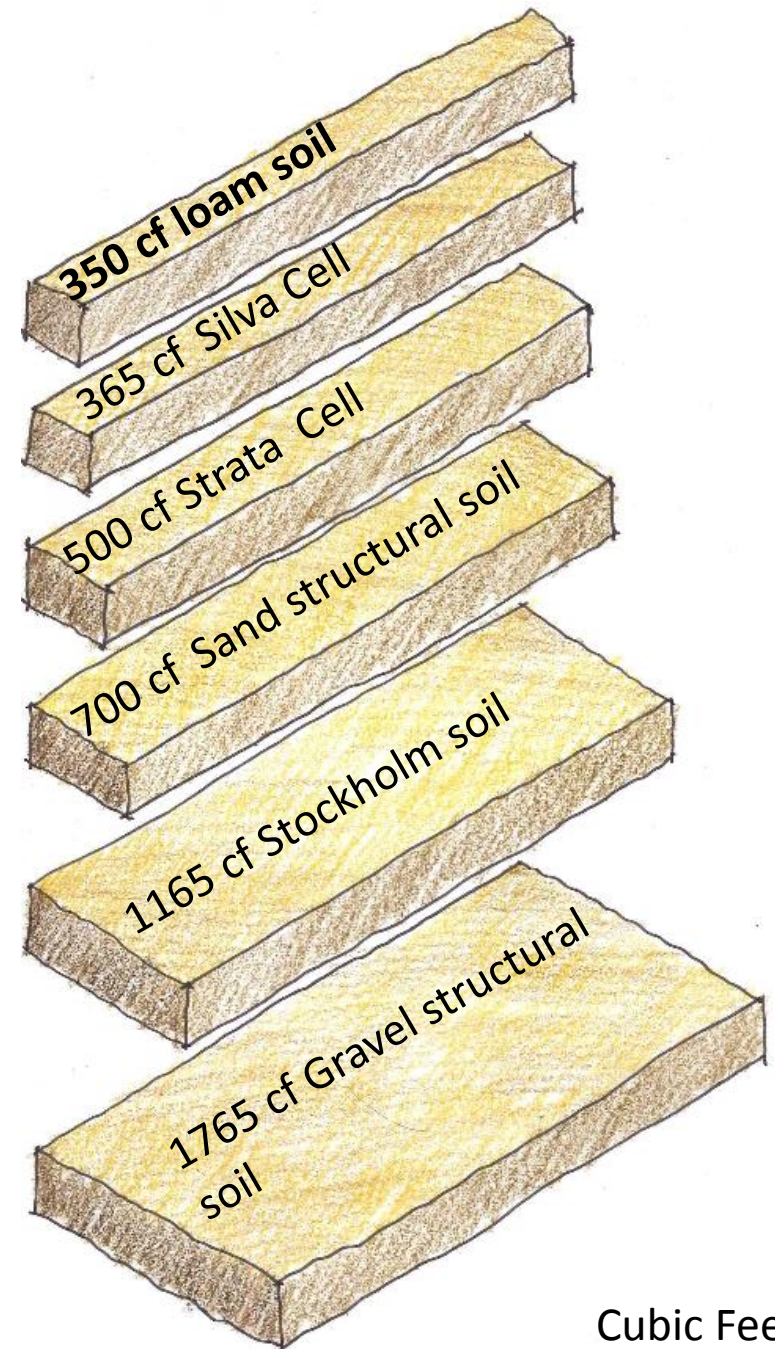
Assuming:

Loam soil	100% efficient
<i>then</i>	
Silva cells	93% efficient ¹
Strata cells	71% efficient ²
Sand based structural Soil	50% efficient ³
Stockholm structural soil	30% efficient ⁴
Gravel based structural soil	20% efficient ⁵

Substitutions must be required to provide the equivalent effective soil volume of the original tender!

Efficiency calculation assumptions

1. Silva cells is 7% space devoted to structure.
2. Strata cells is 6% space devoted to structure. In the Bartlett field trial study held 23% less soil than Silva Cells.
3. Sand based structural soil based on observed reductions in growth in the Smiley/Boston study.
4. Stockholm Soil has 30% void space for soil and roots the rest is rock.
5. Gravel based structural soil contains 20% soil the rest is rock.



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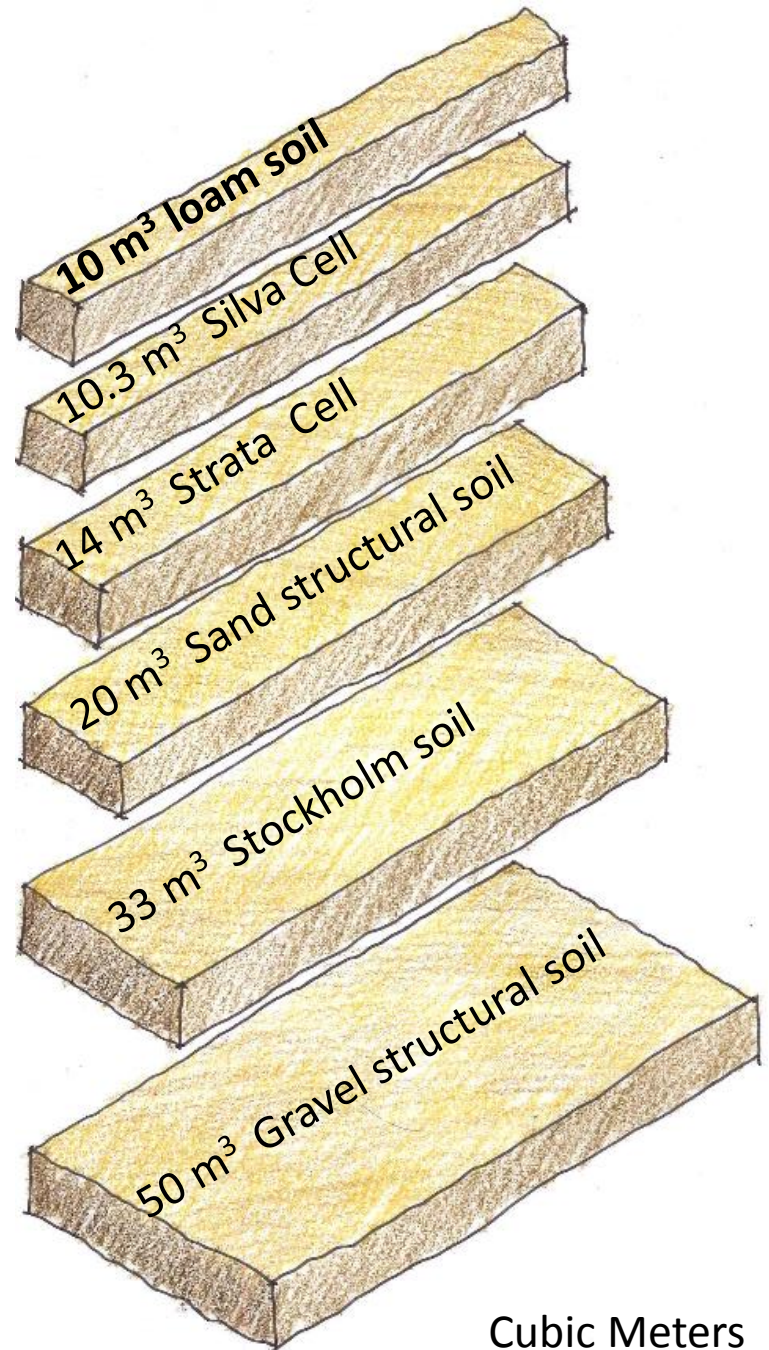
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Cubic Meters