

Stockholm Biochar Project





conventional construction
for sidewalks in
Stockholm
a completely sealed
surface where no water
can be infiltrated or gas
exchange can take place



Concrete tile

Sand

Asphalt

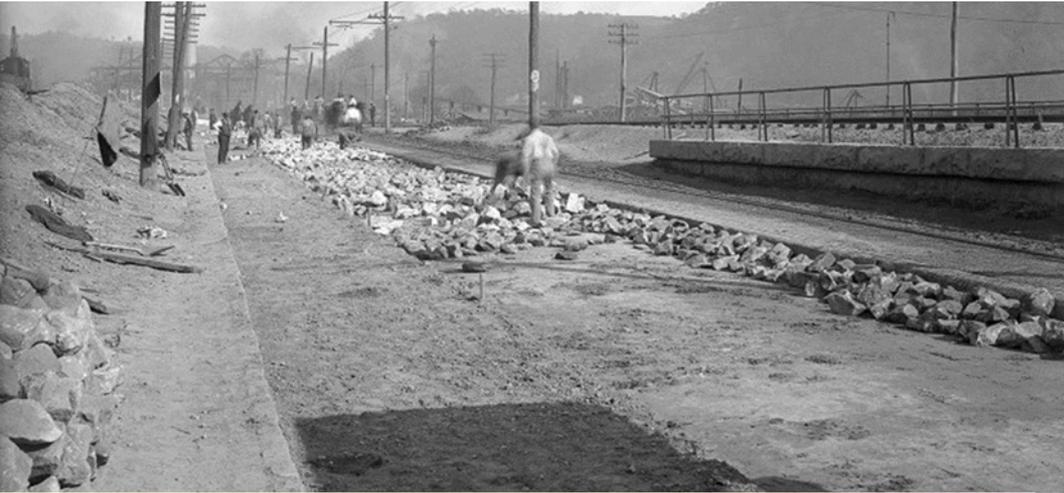
Roadbed crushed granite fraction 0-63 compacted

More than 40
years on the
site





Macadam is a type of road construction, pioneered by Scottish engineer John Loudon McAdam around 1820, in which single-sized crushed stone layers of small angular stones are placed in shallow lifts and compacted thoroughly (WIKI)

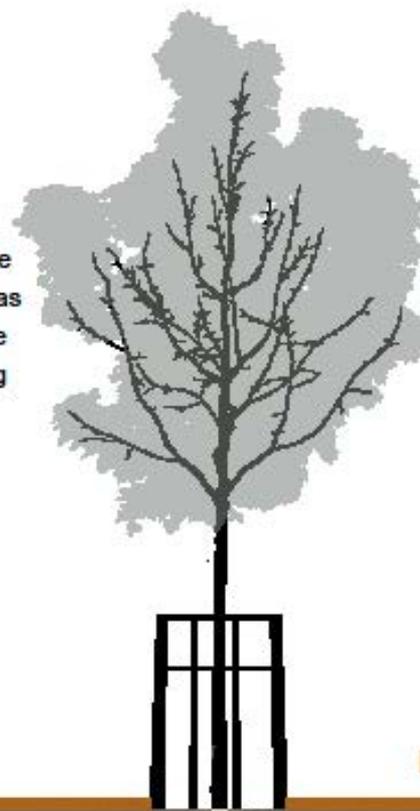
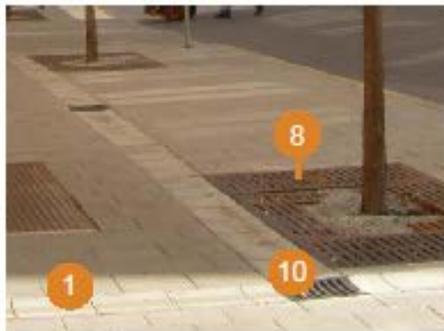


Gives 35-40% porosity

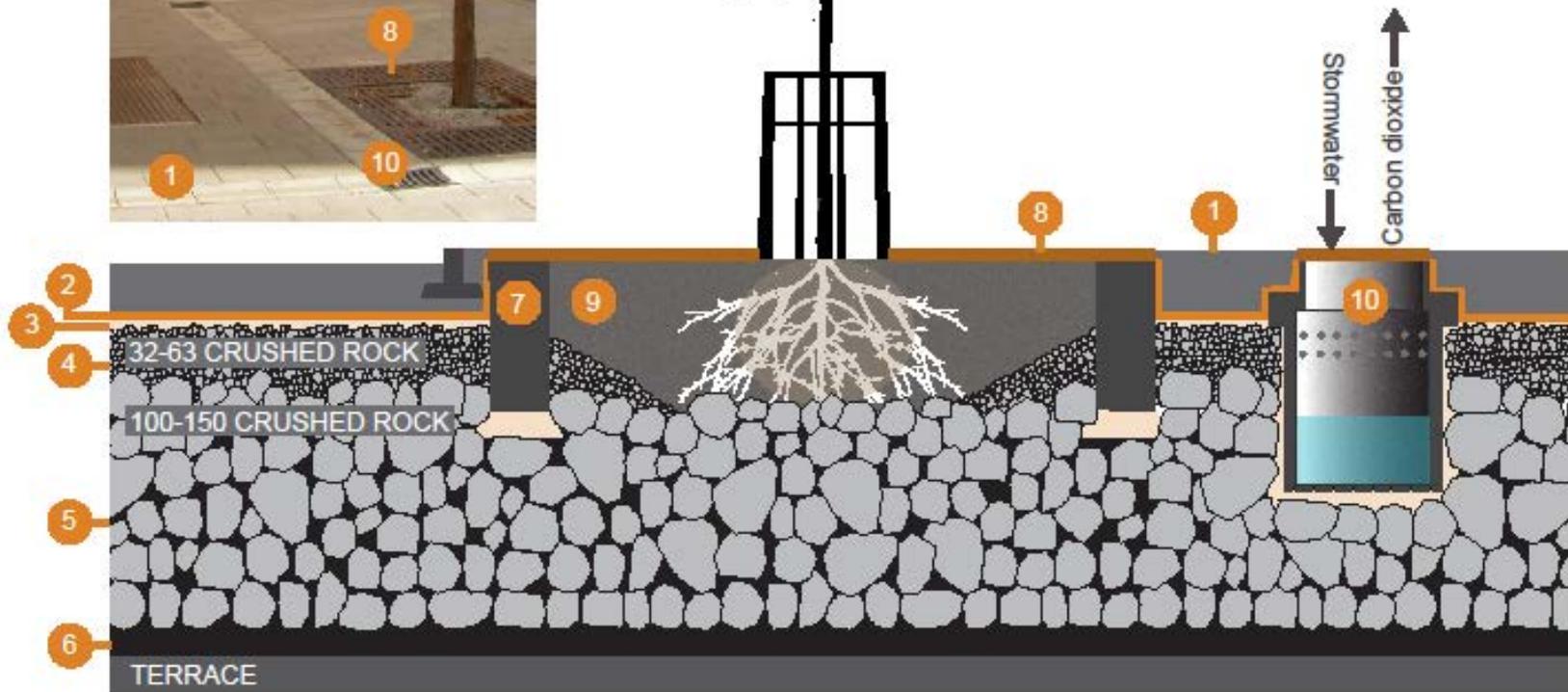
First macadam road in the USA 1823 (WIKI)

Structural soil with biochar

A method for building with stability and to create good growing conditions for trees in paved areas with the use of stormwater and the added value of decreasing the risk of roots damaging paving or underground pipes



1. Paved surface with dished stormwater gutters
2. Geotextile
3. Leveling layer (crushed rock 8-16 mm) – also used for concrete bunker and water/air inlet.
4. Aerated bearing layer (crushed rock 32-63 mm)
5. Structural soil (crushed rock 100-150 mm) with fertilized biochar hosed into the structural volume
6. Pure biochar on terrace
7. Concrete bunker
8. Surface grid
9. Crushed rock with fertilized biochar
10. Inlet for air and water supply



Herrhagsvägen 2009

first time we used charcoal in a
soil mixture

100mm 50% soil 50% charcoal
850mm deep Macadam 32-63mm
2 meters wide





Herrhagsvägen 2011
Trees planted in
50% soil 50% charcoal



Biochar and stone chips = crushed granite (macadam 32-63 mm) and nutrient-enriched charcoal 15%.





Kolonivägen 2016-2017

Magnolias, Cersis, Prunus, Spiraea.

1 part biochar 0-10mm och 3 parts macadam 4-8 mm 600mm.





Haukadalsgatan 2017 macadam 4-8mm 6 parts biochar 1 part, compost 1 part,



Vallhallavägen 2016-2017

one hundred year old avenue of trees get biochar compost and macadam and infiltration of stormwater





- the first time we make grass on macadam 2-6mm 3 parts and 1 part biochar/compost

Pilgatan 2014

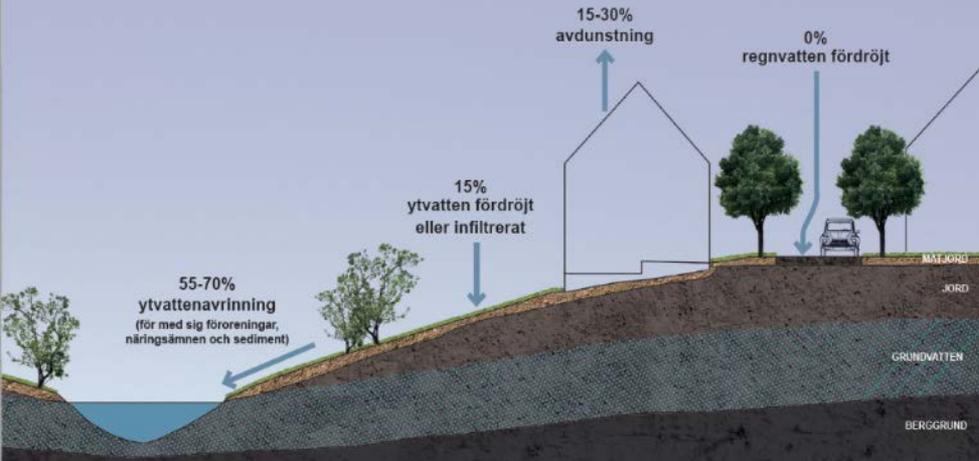
Magnolias and perennials biochar macadam with infiltration of stormwater





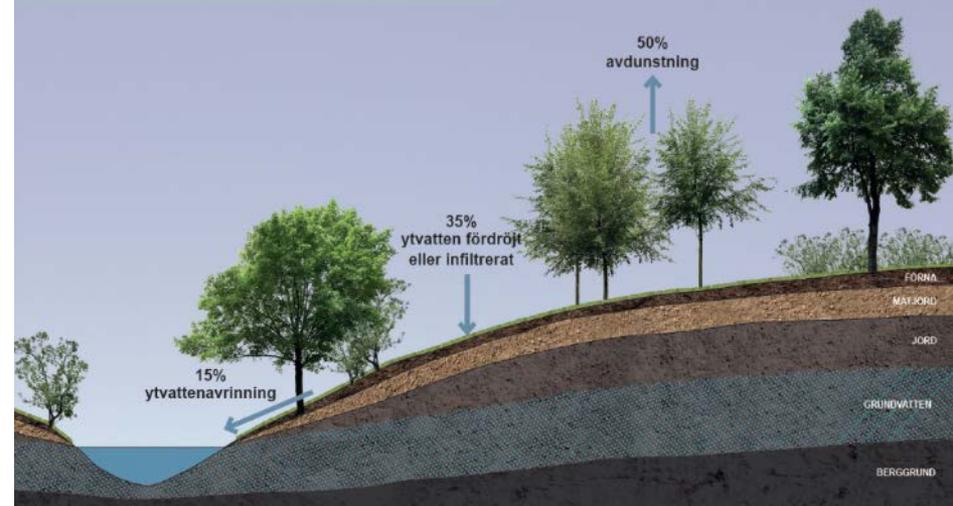
Nybrogatan 2016
Magnolia

disturbed land
profile infiltration
works poorly



One of the most important factors in saving water areas from pollutants is to maintain the soil's infiltration capacity and to counteract compaction

natural soil profile
functioning infiltration



February 27, 2018 | 0 Comments

Roadway runoff causes long-term sensory damage in Pacific Northwest salmon

Toxic roadway pollutants captured and conveyed by stormwater pose a serious threat to coho salmon and other fish in the Pacific Northwest's urban watersheds. New research from Washington State University (WSU; Vancouver) shows that green infrastructure can help reduce mortality rates, but that pollutants can still potentially make fish more susceptible to predators.

Gives healthy trees with all the positive effects it provides



Reduce the risk of flooding



Reduce the heat island effect



locks down carbon dioxide into the ground with the use of biochar in the planting beds

Reduce the presence of particles and carbon dioxide in the air



Less or no use of finite resources

Reduce the load on the storm water systems, thereby reducing pollution in Lake Mälaren and the Baltic Sea





Uppsala 2017









2017

First potatoes grown in
macadam biochar and
compost



2018
First carrots grown in
macadam biochar and
compost

