

Rooftop trees

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Why Rooftop trees?

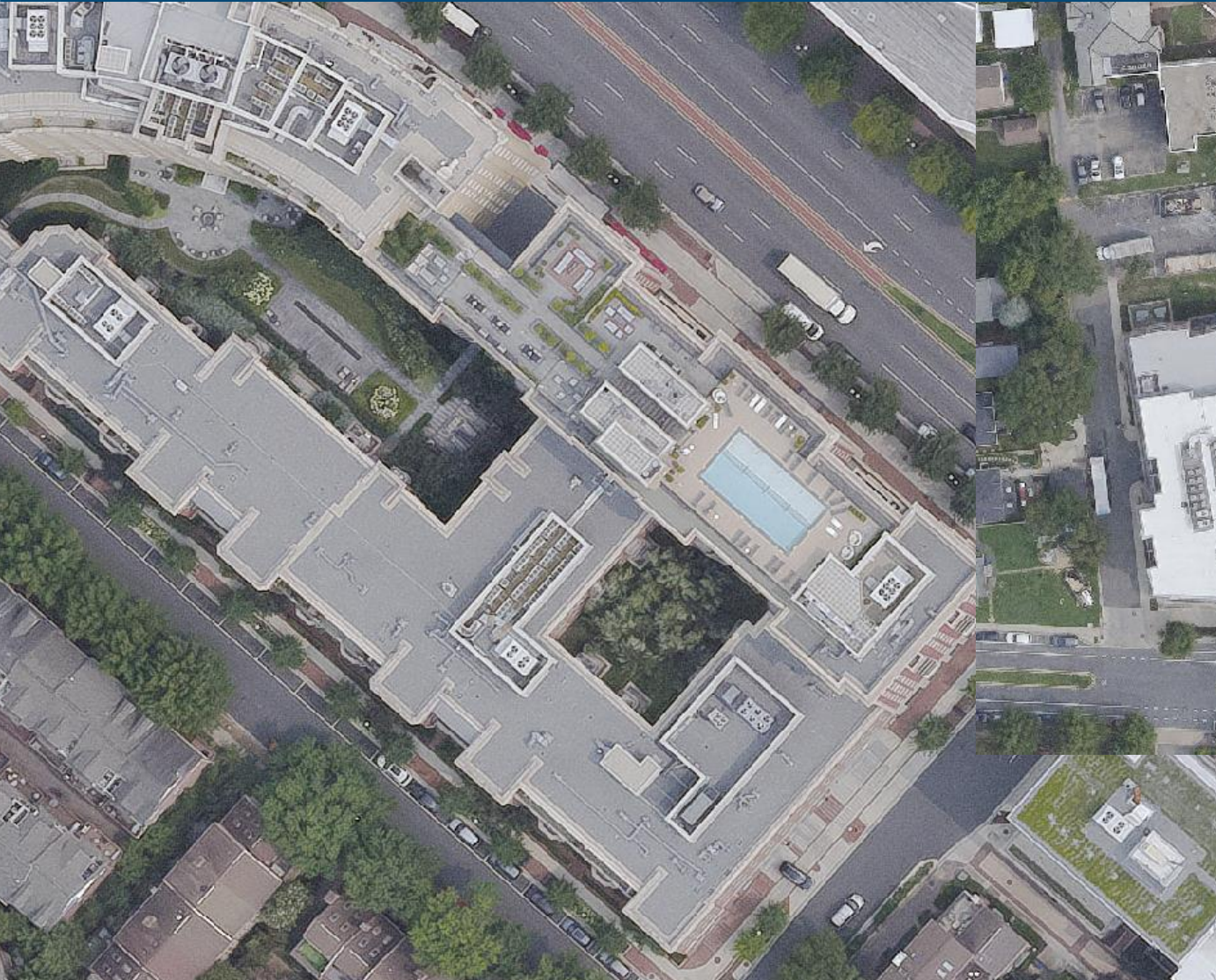
Potential benefits:

- Provide tree canopy in high density areas
- Comfortable private open space can reduce stress on public parks
- Rooftop trees may provide unique wildlife habitat opportunities

Considerations:

- Cost
- Maintenance (access and safety)
- Building load and weight of growing trees
- Tree anchoring and risk
- Drainage and waterproofing
- Limited plant palette
- Limited connection at grade to views and habitat corridors
- Irrigation

Aerial examples of completed projects



750 N Glebe Rd – Left

2201 Pershing Dr - Above

750 N Glebe – Up close



Aerial examples of completed projects



The Heights School - Above
Lubber Run Recreation Center - Left

Aerial examples of completed projects



2000 15th ST N

Assorted pictures for illustration



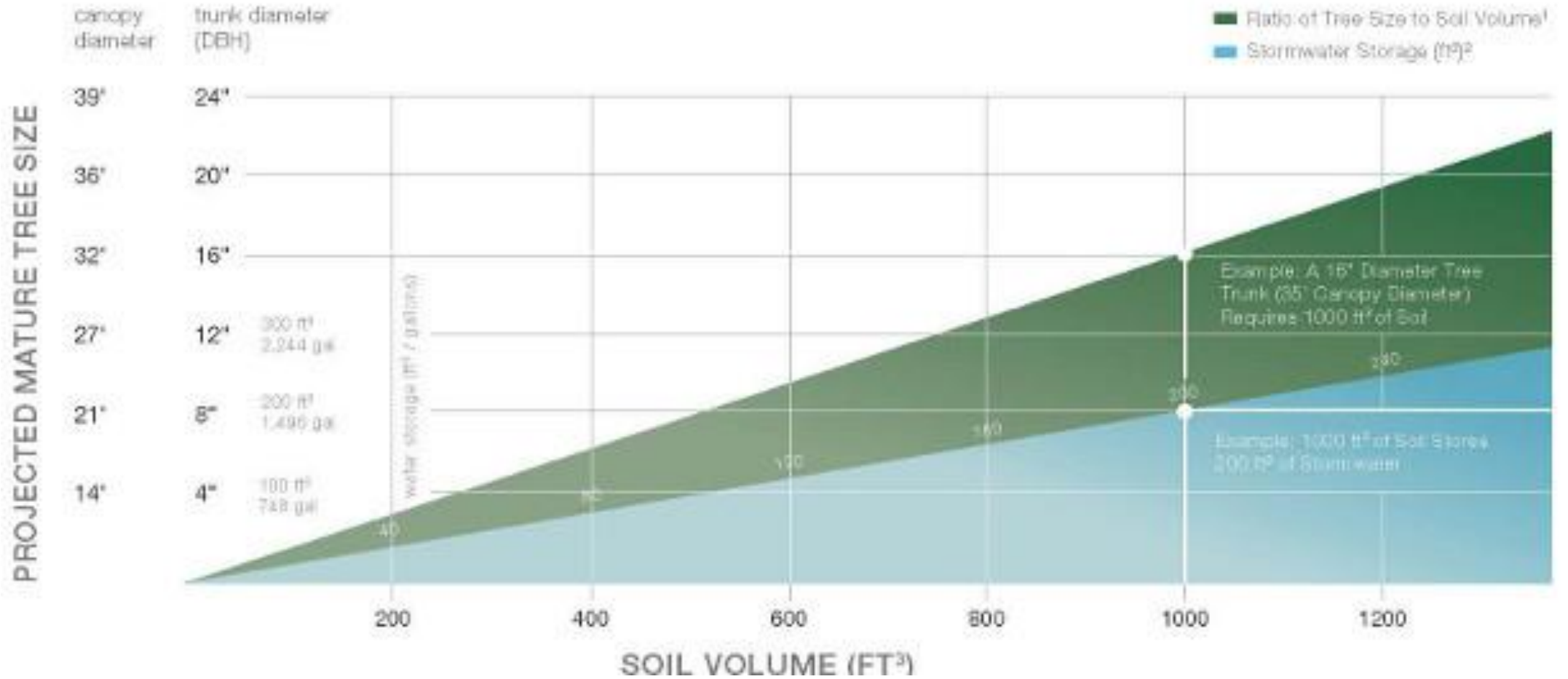
Assorted pictures for illustration



Considerations at beginning of design

- Plan for a “live load” of trees, including their soil, and their mature weight potential. Can the construction method handle the weight?
- Plan for sufficient soil volumes to allow for tree growth to maturity
- Connect soils to allow for natural interaction of roots
- Consider sunlight access to plants
- Height of planting defines plant selection
- Rooftop trees may be temporary trees
- Consider risk of failure and maintenance
 - Plan for failure of trees. Where will trees and their parts fall
 - Prioritize interiors for planting, where failure may have lower impact

Soil volumes



Experimental Rooftop tree list

Genus	Species	Common Name	Size	Planting Location Height: Less Than 40 Feet, above grade	Planting Location Height: Greater Than 40 Feet	Chesapeake Bay Preservation Ordinance Coverage (including native bonus)	Notes
<i>Amelanchier</i>	<i>arborea</i>	Downy serviceberry	Small-Medium	√	√	137.5	
<i>Amelanchier</i>	<i>laevis</i>	Allegheny serviceberry	Small-Medium	√	√	137.5	
<i>Betula</i>	<i>nigra</i>	River Birch	Medium	√		218.75	
<i>Carpinus</i>	<i>caroliniana</i>	American hornbeam	Small-Medium	√	√	137.5	
<i>Cercis</i>	<i>canadensis</i>	Eastern redbud	Small-Medium	√		137.5	
<i>Chionanthus</i>	<i>virginicus</i>	White fringetree	Small	√		62.5	
<i>Corylus</i>	<i>americana</i>	American hazelnut	Small	√	√	62.5	
<i>Crataegus</i>	<i>crus-galli</i>	Cockspur hawthorn	Small-Medium	√	√	137.5	
<i>Crataegus</i>	<i>phaenopyrum</i>	Washington hawthorn	Small-Medium	√	√	137.5	
<i>Crataegus</i>	<i>viridis</i>	Green hawthorn	Small-Medium	√	√	137.5	
<i>Ginkgo</i>	<i>biloba</i>	Ginkgo	Medium	√	√	175	
<i>Gleditsia</i>	<i>triacanthos</i>	Honeylocust	Medium-Large	√		312.5	
<i>Ilex</i>	<i>opaca</i>	American holly	Medium	√		218.75	Short cultivars only
<i>Juniperus</i>	<i>virginiana</i>	Eastern redcedar	Medium	√	√	218.75	Short cultivars only
<i>Magnolia</i>	<i>grandiflora</i>	Southern magnolia	Large	√		393.75	For protected spaces and lower levels
<i>Magnolia</i>	<i>virginiana</i>	Sweetbay magnolia	Small-Medium	√	√	137.5	Shaded area only
<i>Nyssa</i>	<i>sylvatica</i>	Black tupelo	Medium	√		218.75	
<i>Ostrya</i>	<i>virginiana</i>	Eastern hophornbeam	Small-Medium	√	√	137.5	
<i>Parrotia</i>	<i>persica</i>	Persian parrotia	Small-Medium	√	√	110	
<i>Ptelea</i>	<i>trifoliata</i>	Hoptree	Small	√	√	62.5	
<i>Quercus</i>	<i>bicolor</i>	Swamp white oak	Medium-Large	√		312.5	
<i>Quercus</i>	<i>coccinea</i>	Scarlet oak	Large	√		393.75	
<i>Quercus</i>	<i>marilandica</i>	Blackjack oak	Medium	√		218.75	

Questions



Image: <https://deartarch.com/moscows-bagel-house/>