



## Types of green roofs

**Green Infrastructure:** Green roofs consist of a series of layers that create an environment suitable for plant growth without damaging the underlying roof system. Green roofs create green space for public benefit, energy efficiency, and stormwater retention/ detention.

Structural load capacity, how much weight the roof can hold, is a major factor in determining roof design and construction. Green roofs are therefore typically defined as being either extensive or intensive.

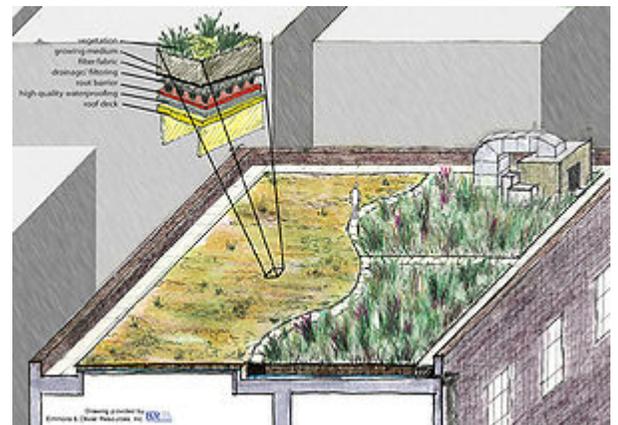
- Extensive green roof: an extensive green roof has growing medium ( **engineered media** ([https://stormwater.pca.state.mn.us/index.php?title=Design\\_criteria\\_for\\_bioretention#Materials\\_specifications\\_-\\_filter\\_media](https://stormwater.pca.state.mn.us/index.php?title=Design_criteria_for_bioretention#Materials_specifications_-_filter_media))) that is 6 inches or less deep
- Intensive green roof: an intensive green roof has growing medium that is more than 6 inches deep

Semi-intensive green roofs represent a roof design intermediary between extensive and intensive roof. The following table summarizes characteristics of the different types of green roofs.

**General characteristics of extensive and intensive green roofs (adapted from Green Roofs for Healthy Cities and the Cardinal Group, 2006).**

Link to this table.

Characteristic	Extensive	Semi-intensive	Intensive
Growing medium depth	6 inches or less	Portions of the green roof above and below 6 inches, with a minimum of 25% of green roof area above or below 6 inches	More than 6 inches
Accessibility	Often inaccessible	May be partially accessible	Usually accessible
Fully saturated weight	Low: 10 to 35 lb/ft <sup>2</sup> (48.8 to 170.9 kg/m <sup>2</sup> )	Varies: 35 to 50 lb/ft <sup>2</sup> (170.9 to 244.1 kg/m <sup>2</sup> )	High: 35 to 300 lb/ft <sup>2</sup> (170.9 to 1464.7 kg/m <sup>2</sup> )



Schematic showing the different components of a green roof. Thicknesses of some layers vary with the design (e.g. extensive vs. intensive roofs).

<b>Characteristic</b>	<b>Extensive</b>	<b>Semi-intensive</b>	<b>Intensive</b>
Plant diversity	Lower	Greater	Greatest
Cost	Low	Varies	High
Maintenance	Varies, but generally lower than for intensive green roofs	Varies	Varies, but generally higher than for extensive green roofs
Stormwater management	Best cost-benefit balance	More growing medium and more vigorous plant growth provides marginally greater stormwater volume benefits	More growing medium and more vigorous plant growth provides marginally greater stormwater volume benefits

## Related pages

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