



# Barrett Company

## Soils

Green Roof-Roofscapes design objective is to be a self-sustaining environment. The roofscape's environment is influenced by land contour, adjacent buildings, sunlight, wind, vegetation, water and soil conditions. These conditions often create an environment different from adjacent at-grade landscaping. The soil must supply the essential plant nutrients of nitrogen, phosphorous, calcium and magnesium.

The soil must perform many functions including:

- offering a substrate to support vegetation
- resisting wind and water erosion
- porous properties to retain moisture yet allow proper root aeration.

Clay content must be controlled to prevent excessive soil compaction which impedes drainage, reduces soil oxygen content and adds unnecessary weight. However, some clay content is warranted to resist wind erosion and expanded clay or slate will improve water retention.

Additives such as humus, compost and minerals such as gravel, crushed brick, sand, peat, mica, and pumice can often be used to good advantage. Organic content must be kept under 33% to address fire concerns.

Soil considerations include:

- Vegetation Requirements
- Moisture Nutrient Retention
- Drainage Design
- PH Level
- Porosity and Compaction
- Weight Restriction on the Structure
- Resistance to Fire Propagation
- Structure for Plant Anchorage

A Landscape Architect or a horticulturist should be consulted to provide the optimum selection of engineered soil selection for the specific site location and conditions.