

## My Roof is Alive

- A Dense concrete jungles, crowned by tar and asphalt rooftops, cause a number of complex problems. They raise temperatures in urban areas and cause stormwater run-off that can overflow sewage systems and rivers. Living roofs offer simple solutions to these problems. A living, or green, roof refers to a rooftop covered by water-absorbing plants like grasses and succulents, which greatly reduce the temperature above and around the building and lead to lower energy costs and significantly less stormwater run-off.
- B The tradition of growing plants on rooftops can be traced back to prehistoric Scandinavia where sod, or dirt, roofs provided greater insulation and reinforced the structural integrity of humble dwellings. Homes in Norway can still be found where grass, plants, and even full-size evergreens spring from the roofs, though the term “sod roof” is a misnomer. The roofs are covered with a layer of birch wood that provides the waterproofing for the home below.
- C In the 1970s, Germany developed the technology to create lightweight, low-maintenance living rooftops over urban dwellings. The city of Chicago, which covered 20,000 square feet above its City Hall with vegetation in 2001, led the new movement in North America. Officials saw immediate benefits to their action when a 50 degree difference was recorded between

the green roof and a nearby black tar roof. In the ensuing years, the city estimates that it has saved around \$3,600 in annual cooling and heating costs. Officials believe that if all Chicago rooftops went green, the reduction in energy demand would be equivalent to reducing demand by 750,000 consumers and the load on the city's sewer system would be slashed by almost 70 percent.

- D The trend to install living roofs has spread across American cities. The new Washington D.C. baseball stadium has one. The Target Center Arena in Minneapolis has one. The new Visitors' Center at the Brooklyn Botanical Garden calls theirs “a rooftop meadow.” Many private and public initiatives help families install their own living roofs, not just for the reduced energy costs and conservation of stormwater but also for the creation of new natural wildlife habitats and increased agricultural space. In addition, living roofs filter pollutants and carbon dioxide out of the air and pollutants and heavy metals out of rainwater.
- E The drawbacks of green roofs have to do with the expense of installing the technology on existing structures. Though lightweight, they consist of many layers above the original roof, including insulation, drainage, a root barrier, as well as a water seal, a growing system, and then the plant life itself. The added weight may require additional structural support. But if you can afford to install a living roof, the advantages seem to far outweigh the drawbacks.