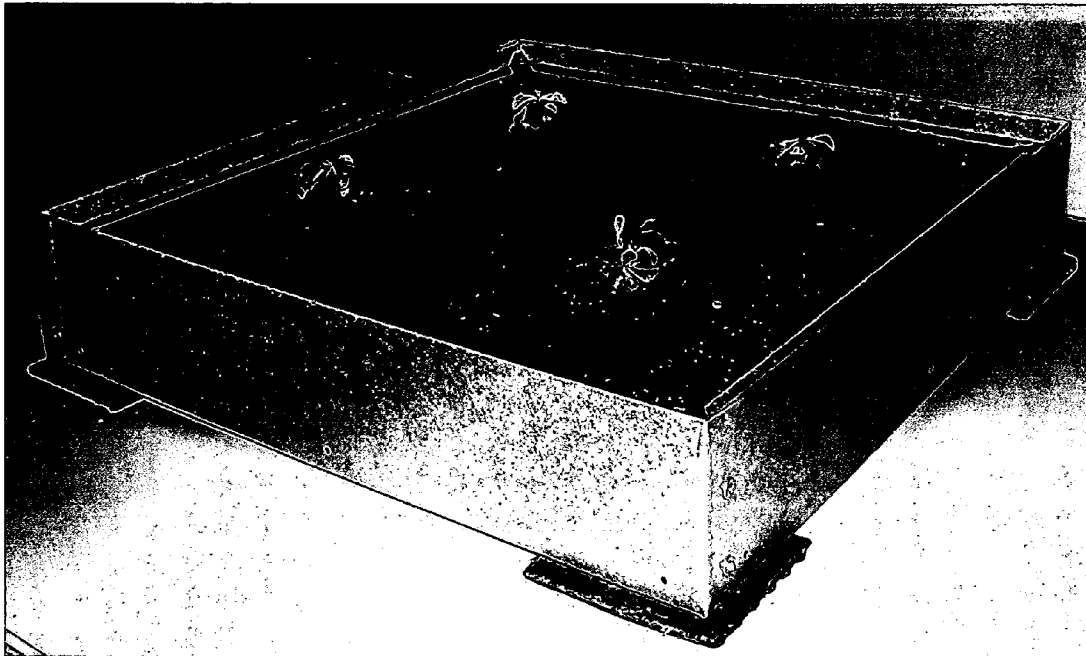


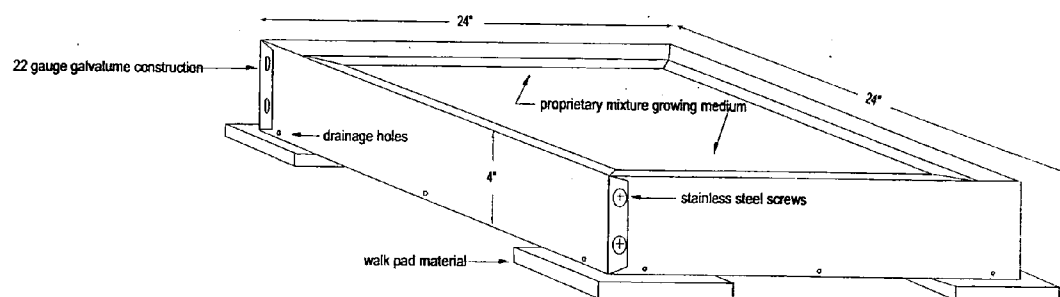


US 20050120656A1

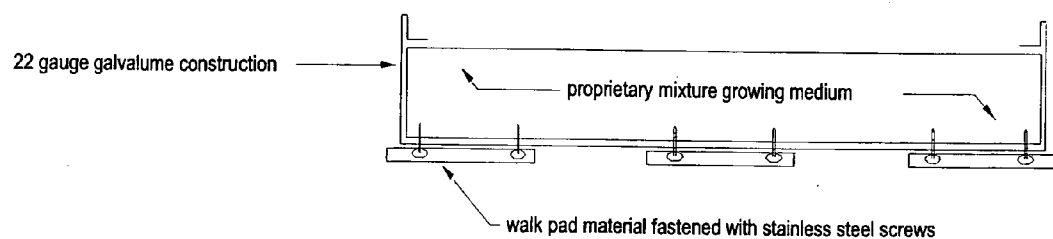
(19) **United States**(12) **Patent Application Publication**
Luckett(10) **Pub. No.: US 2005/0120656 A1**(43) **Pub. Date: Jun. 9, 2005**(54) **GREEN ROOF BLOCKS**(57) **ABSTRACT**(76) Inventor: **Kelly William Luckett**, Florissant, MO
(US)Correspondence Address:
Kelly Luckett
3713 Philip Meadows Court
Florissant, MO 63034 (US)(21) Appl. No.: **10/731,386**(22) Filed: **Dec. 9, 2003****Publication Classification**(51) **Int. Cl.⁷** **E04F 13/00; E04F 15/00;**
E04F 19/00(52) **U.S. Cl.** **52/311.2**

Green Roof Blocks is a completely unique approach to covering the surface of roof tops with vegetation. The strategy of using self contained, durable 22 gauge galvalume sheet metal material containers, which can be easily installed and moved, differs from anything currently available in the market place. Much heavier plastic or polypropylene containers are currently on the market with limited success. My product requires no machinery to lift, nor any particular training to install. The use of rubber composite walk pad material as resting pads assures roofing system compatibility and warranty integrity. Thus no additional materials are required to separate the container from the roofing system. In fact, the walk pad material can be procured from different roofing system manufacturers allowing the roofing system manufacturer to provide a material acceptable to come in contact with the roofing material. This ease of use, choice of material and configuration, and system compatibility is unique to my invention.

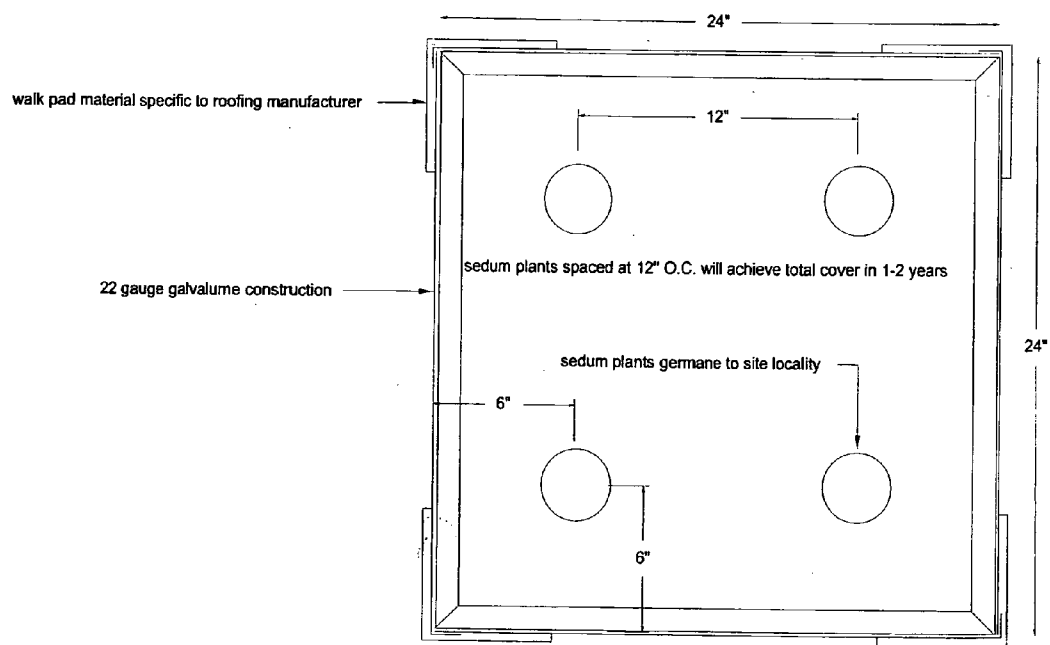




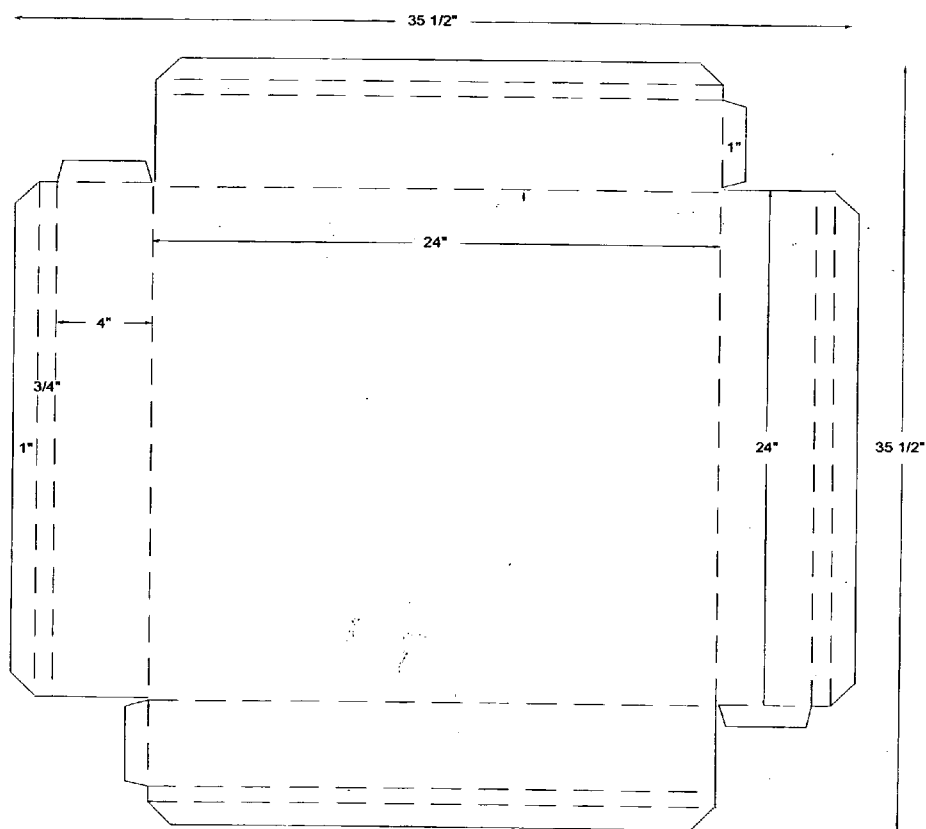
ISOMETRIC VIEW



CROSS SECTION



PLAN VIEW



Sheet Metal Pattern Layout

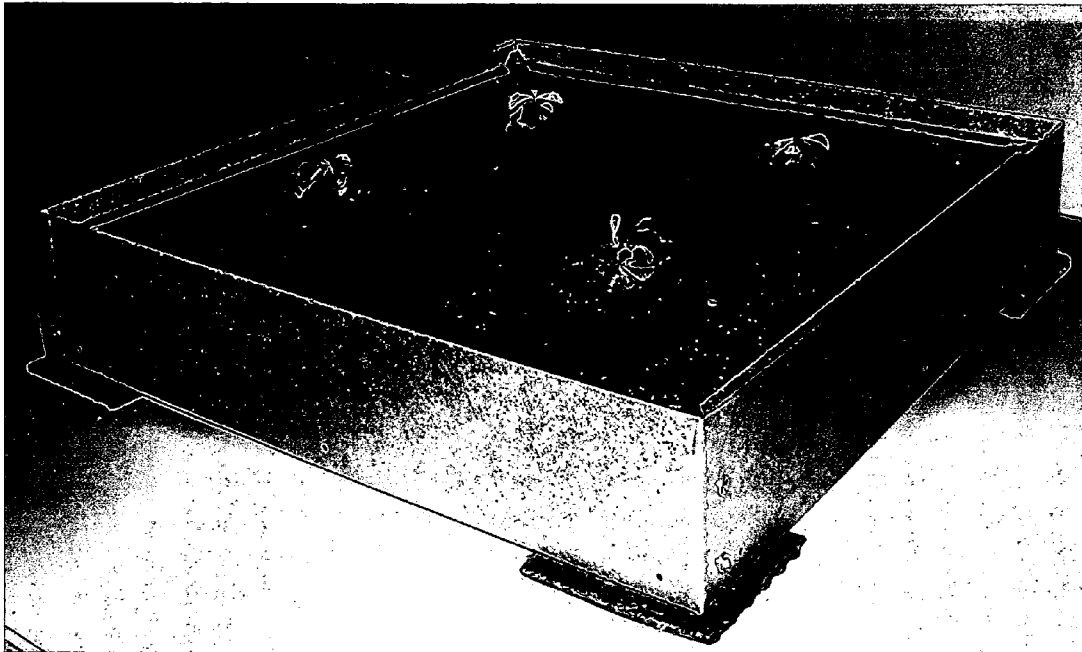


Photo: Completed Green Roof Block



Sedum kamtschaticum – variegated form

Photo: Plants to be used in my invention Green Roof Blocks

GREEN ROOF BLOCKS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] There are no Cross References to Related Applications to declare.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] This invention is not the subject of Federally Funded Research or Development, and has not received any federal funding.

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX

[0003] This Non provisional Utility Patent Application contains no Sequence Listing, Table, or Computer Program Listing Compact Disk.

BACKGROUND OF THE INVENTION

[0004] Green roofs, roof gardens, eco-roofs all refer to the planting of vegetation on the roof surface of building structures. The principle of green roofs has been widely used in Europe for several decades. Roof top vegetation substantially reduces storm water run off, solar heat gain, and thermal transfer through the roof. In addition, large vegetated surfaces help to replenish oxygen through photosynthesis. Though the benefits are many, the typical green roofs costs are several times that of most roofing systems. The high price of typical green roof construction emanates from costly waterproofing procedures, extensive drainage layers, soil of depths ranging from eight inches to twenty four inches, and additional required structural construction to support resulting increased weight. Repairs to the roofing membrane are extremely expensive due to the large quantities of material that must be moved to access the waterproofing layer. Soil based plant disease can quickly spread throughout the system requiring the complete replacement of the vegetation.

BRIEF SUMMARY OF THE INVENTION

[0005] Green Roof Blocks are sedum kamtschaticum plants housed in 24 inch square, self contained units. The containers can easily be placed on the roof providing quick and inexpensive installation of green roof vegetation. The system weight is between 12 and 18 pounds per square foot, well within the dead load capacity of most building roof structure. Each unit weighs between 50 and 75 pounds, depending on the level of water saturation, which can be easily moved to access the roof membrane for repair. In the event of soil based plant disease, contamination is contained within the unit allowing for the replacement of only the effected units. This simple roof greening methodology can be used in conjunction with typical roofing systems, on typical building structure, allowing building owners to realize the benefits and cost savings of a green roof for a fraction of the cost of typical green roof construction.

DETAILED DESCRIPTION OF THE INVENTION

[0006] This invention, Green Roof Blocks, is constructed in a completely original manner, using unique materials for

the container and the growing medium. Green Roof Blocks are a self contained roof greening product made from the following components; organic soils, mineral particulate, Sedum Kamtschaticum plants, 22 gauge galvalume sheet metal, stainless steel screws, rubber composite roofing walk pad material. A Container constructed of 22 gauge galvalume sheet metal sized 24 inches by 24 inches and 4 inches in depth, is filled with 80% mineral (haydite) and 20% organic growing medium, and four sedum kamtschaticum seedlings are planted six inches from each side. The box construction is fabricated from flat sheet metal material cut from a 35.5 inch square section. Though the product is prepared for fabrication utilizing a custom machined punch press to cut the desired shape, the following procedure can be used to cut the material by hand using a pair of quality tin snips. Lines at one inch, one and three quarter inches, and five and three quarter inches are etched from all four edges.

[0007] The four corners are cut off at a 45 degree angle starting at six and three quarter inches from each corner. One side of the line etched at five and three quarter inches is cut to the perpendicular intersection of the adjacent line etched at five and three quarter inches. This step is repeated on one line only for all four sides. A one inch tab is etched along the side of the five and three quarter inch line that was not previously cut in the prior step. This tab extends from the intersection of the five and three quarter inches lines to the one and three quarter inches line. The short ends of the tabs are trimmed at an angle to the intersection of the five and three quarter inches lines and to the intersection of the five and three quarter inches lines and the one and three quarter inches lines. Four final three quarter inch long cuts are made along the five and three quarter inches lines to the angled tab cut made in the previous step. The container is now ready for bending on a sheet metal box forming brake. Beginning at each outer etched line, bends are made as follows. The one inch line is bent to ninety degrees, the one and three quarter inch line is bent in the opposite direction to the capacity of the brake. This bend is then squeezed in the clamping head of the brake to form 180 degree fold. These steps are repeated for all four sides. The bends along the five and three quarter inches lines are then formed to 90 degrees in the direction of the one and three quarter inch bend. These four bends form the sides of the container. The one inch tabs are then folded around each corner and fastened using two one inch self tapping stainless steel screws. Three, one eighth inch diameter drainage holes, one at each end and one in the center, are then drilled along the bottom of each side just above the bend. Five inch by five inch sections of rubber composite roofing walk pad are the fastened to the bottom of the container. One pad is positioned at each corner extending beyond the container sides one half inch on the outer edges. A fifth pad is positioned in the center of the container. The pads are fastened with the dimples facing downward using four one inch, self tapping, stainless steel screws per pad. The screws are positioned between dimples and counter sunk into the walk pad material. The growing medium is then filled to a depth of three and one half inches and the seedlings are planted burying the roots and covering the stem by one inch.

List of Drawings of my invention: Green Roof Blocks

[0008] Page 1 Isometric View

[0009] Page 2 Cross Section

[0010] Page 3 Plan View of the Completed Product

[0011] Page 4 Plan View of the Sheet Metal Pattern Layout

[0012] Page 5 Photo of Completed Green Roof Blocks Product

[0013] Page 6 Photo of Plant Species To Be Planted In Completed Product

1. What I claim as my invention is the fabrication of a sheet metal container with roofing system compatible pads on the bottom and planted with drought resistant vegetation to be used for the purpose of economically covering roofs with vegetation.

2. I further claim that the use of 22 gauge galvalume sheet metal for the container of modular roof greening products to be unique to my invention:

3. Additionally, I claim the sheet metal configuration of my invention to have novel functionality not present in any available product.

4. In conclusion, I claim that the use of roofing system specific walk pad material, procured from various manufactures, as the material the container rests on that comes in physical contact with the roofing system, affords roof system compatibility and warranty integrity unique to my invention.

* * * * *