



CASE STUDY

metal roof to green roof

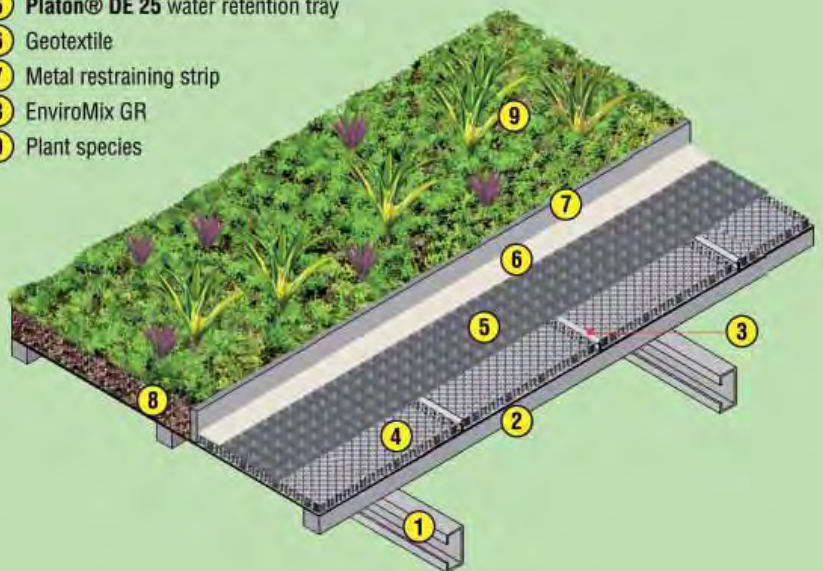
Transforming metal roofs to environmentally friendly green roofs
– a cost-effective system from Elmich

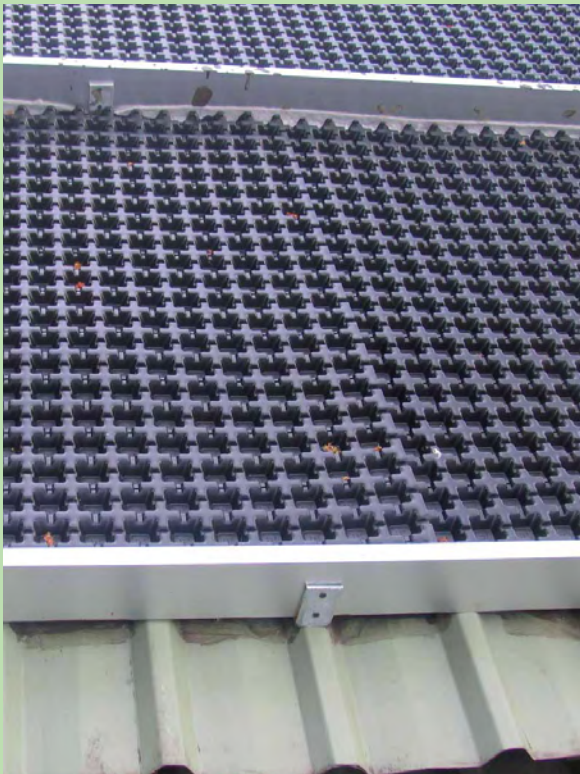
The Aramsa Garden Spa, a garden sanctuary set in the midst of Bishan Park in Singapore had originally an unattractive exposed metal roof which was in conflict with the theme of a natural tropical garden spa theme. The metal roof did not assimilate well into the natural ambience, created excessive noise during periods of rainfall and on hot days acted as a radiator transferring heat to the room below.

The transformation from metal roof to green roof was effected by the installation of **VersiCell®** drainage modules, **VersiDrain® 25P** drainage and water retention trays, geotextile filter fabric, **EnviroMix GR** planting media, and the planting of drought-tolerant plant species suited for Singapore's tropical environment.

To prevent plant media movement, aluminium battens were anchored onto the sloping metal roof and **VersiCell®** interlocking drainage

- 1 Steel C-section
- 2 Steel purlin
- 3 Metal roof
- 4 **VersiCell®** drainage/air insulation cell
- 5 **Platon® DE 25** water retention tray
- 6 Geotextile
- 7 Metal restraining strip
- 8 **EnviroMix GR**
- 9 Plant species





modules were placed between the metal ribs to provide an insulating barrier and a level surface for the subsequent installation of **VersiDrain® 25P** drainage and water retention trays. A geotextile filter fabric was then laid over the drainage and retention trays. Thereafter EnviroMix GR planting media, a lightweight and primarily inorganic soil-less growing media which supports beneficial microbial activity and has high water absorbency and retention capability but low heat absorbency, was placed over the filter fabric.

Locally sourced plant species selected for their hardiness, colour, height and ability to tolerate high tropical rainfall followed by hot and dry periods and requiring minimal maintenance were planted. Plant species selected included: *Furcraea Foetida*, *Zephyranthes*, *Tradescantia Pallida*, *Sedum Mexicanum*, *Pedillanthes* and *Rhoeo*.

The Aramsa Garden Spa is now able to reap the benefits and rewards of having an aesthetically pleasing and functional green roof. The green roof, with its range of colourful plants and flowers which has become a magnet for birds and butterflies, now perfectly complements its natural surroundings and provides a heart-warming and refreshing view for visitors to the spa and park whilst also keeping the interior of the room below quiet, cool and comfortable and substantially saving costs by reducing energy consumption.

Elmich (Far East) Pte Ltd is an ISO 9001 certified company committed to providing cost effective systems and solutions for your landscape engineering needs.



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