

Vegetative Architectural Splendour – A Fytogreen Exclusive

As our forests and land are replaced with impermeable surfaces due to urban development, the necessity to recuperate green space is becoming increasingly essential for the health of our environment as well as our well-being. Vegetated or green roofs are one prospective remedy for this problem. Establishing plant material on rooftops provide abundant ecological and economic benefits including stormwater management, energy conservation, increased longevity of roofing membranes, as well as providing a more aesthetically pleasing environment to work and live.

The alleviation of stormwater runoff is considered by many to be the primary benefit because of the prevalence of impervious surfaces in urban areas. The rapid runoff from roof surfaces can aggravate flooding, increase erosion, and may result in raw sewage that is discharged directly into our rivers/sea. The larger amount of runoff also results in a greater quantity of water that must be treated before it is potable. A major benefit of green roofs is their capacity to absorb stormwater and release it slowly over a period of several hours. Green roof systems have been shown to retain 60-100% of the stormwater they receive. In addition, green roofs have a longer life-span than standard roofs because they are protected from ultraviolet radiation and the extreme fluctuations in temperature that cause roof membranes to worsen. Furthermore, the construction and maintenance of green roofs provide business opportunities for nurseries, landscape contractors, irrigation

specialists, and other green industry members while addressing the issues of environmental awareness.

Fytogreen Australia, an Australian company based at Somerville in Victoria, and has been creating a multitude of environmental benefits for the last 8 years. Its main product is a medium known as Hydrocell, a substance that by volume comprises 3% dry matter and 97% cavity. Hydrocell is a unique soil improver with remarkable water holding properties. It looks like polystyrene flakes, but mixed into your soil or potting mix, Hydrocell holds up to 60% of its volume in water. The product is sold in two forms: as solid, hard foam Hydrocell RG30 for roof gardens and planter boxes, and as regular Hydrocell hard foam flakes for use in soil to aid turf, tree and garden-bed establishment and in potting mixes for hanging baskets, planter boxes and patio pots.

Fytogreen also manufactures under the brand names:

- Fytofoam - Insitu foam manufacturing and application in turf
- Hydrocell RG30 solid hard foam for roof gardens and planter boxes
- Fytozell - Neutralised foam flakes and solid foam slabs for specialised Hydroponic culture
- Fytowall - Neutralised foam slabs, wrapped and placed in frames for vertical gardens & modular turf

Features of the foam are:

- Environmentally friendly
- Biodegradable
- Sterile / Inert



Fytofoam being applied - Tunks Park, North Sydney



Reconstruction of VFL ground Frankston - December



Fytofoam laid

All images and content courtesy of Fytogreen



Better Homes & Gardens show display wall



Balcony, Mort St, ACT



Creswick Street, Brighton



Frankston Private Hospital

- Lightweight
- Balanced water and air holding ratio of 60- 37%

Introduced into the root zone of grassed areas, the open cell structure readily absorbs water & nutrients, retaining them so that the grass can access them when required. It also retains at least 37% air - vital for good grass growth. Produced as a pure white foam, Fytofoam is sterile, inert and environmentally safe. Biodegradable, it breaks down over ten years by hydrolysis, becoming carbon and nitrogen.

The effectiveness of Fytofoam does not decrease during that period. Turf roots actually grow through the Fytofoam and take over the role of Fytofoam over time. Finer, deeper roots and improved turf growth makes the grass cover much more dense and therefore more hard-wearing.

Fytofoam holds around 60% water by volume and is very easy to re-saturate, optimising water use and reducing losses through evaporation. The water is released gradually, which is a huge benefit when amending hydrophobic soils. Healthier turf results from reduction of root zone compaction. Fytofoam does this by increasing the average soil pore size in soils & promoting finer, denser root growth.

Major Benefits

Less irrigation and fertilizer

Fytofoam greatly improves absorption and soil water-holding ability. You'll likely need 30% less water... so you can save some 30% on the entire cost of watering over the next 10 years and more. Nutrients are absorbed in the open cell structure of Fytofoam and are gradually released, reducing fertilizer leaching. Fytofoam itself is not a fertilizer.

Improved drought tolerance and less maintenance

Fytofoam increases the root volume through increased soil aeration and moisture retention. Fytofoam will always make better use of whatever rain does fall and turf recovery will be faster, when the rains do come. Fytofoam reduces compaction in the rootzone, lessening the need for slicing or verti-draining. The self-

restoring capability of your turf is also greatly enhanced.

Slit-injection for Existing Fields

Existing fields and fairways are not taken out of play. Up to 1.5 ha per day can be slit-injected by an approved applicator. Slit-injection doubles the surface area for water / air access to the root zone. And water falling on a Fytofoam slit-injected field quickly soaks in deep and spreads out sideways. There's no need to repeat the injection of Fytofoam because it lasts up to 10 years.

In 2005, Fytogreen developed a small version of the large sportsfield slit injection unit for restricted access sites where the large unit could not venture. It has proved popular with developers as a viable method of improving the establishment and sustainability of turf nature strips

Fytofoam Layer for new fields

Ideal for improving turf establishment, increasing water and nutrient retention in the rootzone and reducing future compaction.

A layer of Fytofoam is laid on a firm level surface by an approved applicator just prior to turfing, sprigging or seeding. The foam layer is incorporated to the specified depth by a high speed rotary hoe, between 4-12 hours after application.

New fields are brought up to a playing condition much sooner, as turf treated to Fytofoam establishes itself rapidly and ensures more uniform growth, reduced weed competition and a denser turf with a significantly deeper root system.

Fytofoam is used in new fields to assist in aeration of the rootzone, which is why it is used in high profile UK sportsfields like Upton Park, home of West Ham United and Croke Park, Ireland. Water availability is not an issue but air in the soil and compaction are.

Recent field trials completed by Alterra Wageningen University in Spain has demonstrated a water saving between 41-50% in the form of reduced number of irrigations required in a USGA sand profile due to improved rootzone water retention. This saving translates to sand profile sportsfield constructions anywhere in the world.

Vertical Garden System

The Fytowall vertical garden system is vertical, space saving, environmentally friendly and low maintenance option. The system features a series of modular panels containing a light weight soil-less growing media in which a wide variety of plant species grow. Supported by a hydroponic watering system, the Fytowall garden panels are attached to a vertical surface such as a wall, fence or balcony. At the time of installation the plants are already pre-grown and trained for vertical growing, creating an instant established visual display. Fytowall is designed to be sustainable, water efficient and robust in all growing conditions.

Categories Of Green Roofs

Extensive Roof Gardens

Comprises of a shallow profile of between 50-100mm. Planted with prostrate/low growing plants including mosses, sedums and water-stress tolerant grasses. This system is lightweight and requires minimal maintenance. Up to 100kg per m2 in weight. These roofs are generally not readily accessible.

Modular Extensive Roof Gardens (MERG)

The key to this modular system is the instant garden effect. Comprises of a shallow profile of between 80-100mm. The modules pre planted off site with low growing/prostrate plants. The system is lightweight, portable and requires minimal maintenance. Up to 90kg per sqm in weight. These roofs are generally not accessible.

Semi-Extensive Roof Gardens

Comprises of a deeper profile than the "extensive" profile, of between 100-200mm. This allows a greater diversity of plants (turf, grasses & ground covers.) Principally lightweight, but may require some maintenance. Up to 200kg per m2 in weight.

Intensive Roof Gardens

The intensive profile is deeper, between 200-1200mm. This allows for the full diversity of plants from turf to trees to be used. Intensive Roof Gardens are generally used as recreational spaces. These roof gardens place a large amount of weight on a building roof and require regular maintenance as per a normal garden. This is the current standard type of roof garden/planter box in Australia.

The Fytogreen Roof Garden System

The "magic" of the system is the lightweight water retentive substrate called Hydrocell RG30. This remarkable material makes possible the construction of a long lasting lightweight, water storing, efficient roof garden.

Hydrocell RG30 is a foamed aminoplast resin that can either be manufactured onsite or delivered in pre fabricated sheet form in 60mm and 100mm thick options, or made as a special RG30 flake for extensive roof gardens and planter boxes which can be applied using 1 m3 bulka bags.

The RG30 Hydrocell layer replaces the traditional heavy sand filter layer in intensive roof gardens and contributes part of the growing media on extensive roof gardens. Hydrocell is lighter in weight, increases usable media volume, and has significantly higher water and nutrient holding capacity. It also acts as a capillary mat returning water to the topsoil and acts as a fines filter protecting the geofabric layer and improving the quality of the storm water

Modular Turf is a turf module for use in vertical situations such as staircases, and on grass-topped bollards. Fytogreen was first unveiled at the Landscape Australia Expo in Melbourne in August, 2007.



Clara St Apartments



Regrowth in ground Frankston - January



Connex- Flinders St Station



Grow in 3 months later



General Pants Bourke Street Melbourne