



Geosynthetics

CI/SfB | | (90) | Wn6 | |
October 2013

Golpla®

Pre-Grown grass reinforcement
and erosion systems



Golpla® solutions

- Pre-Grown modules
- grass reinforcement
- erosion control
- gravel retention



Golpla® Pre-Grown® (page 6)

Golpla® is a rigid, high quality re-cycled plastic grass reinforcement and erosion control system, offering integrated and flexible solutions designed to perpetuate the growth of grass under conditions of intensive vehicular or pedestrian traffic.

Golpla® offers designers an extensive range of landscaping solutions including minimal dig, fast turnaround options using Golpa Pre-Grown with comprehensive design and technical back up and on-site support to deliver optimised solutions. The system can also be used to retain gravel infill.

Whether grass or gravel, Golpla® offers well drained, high traction erosion resistance for all types of Car Parking Areas.

Combined with Cellweb®, Golpla® offers further solutions for HGV trafficked areas incorporating excellent levels of tree root protection.

Key applications

- Foot paths
- Cycle paths
- Access roads
- Car parks
- Caravan and campsites
- Sports facilities
- Emergency access¹
- Wheel chair access

Features and benefits

- Complete erosion control
- Heavy traffic solutions
- Rapid, reduced-dig options
- High infiltration and SUDs compliant
- Pre-Grown grass options
- 94% infill area
- Unaffected by temperature extremes²
- White or yellow demarcation
- Wide Golpla® colour range
- 100% re-cycled and 100% re-cyclable material
- Minimal and simple maintenance

¹ Not Quicklay®

² When tested to DIN EN 10204-2.2



Golpla® units with Pre-grown high quality turf infill

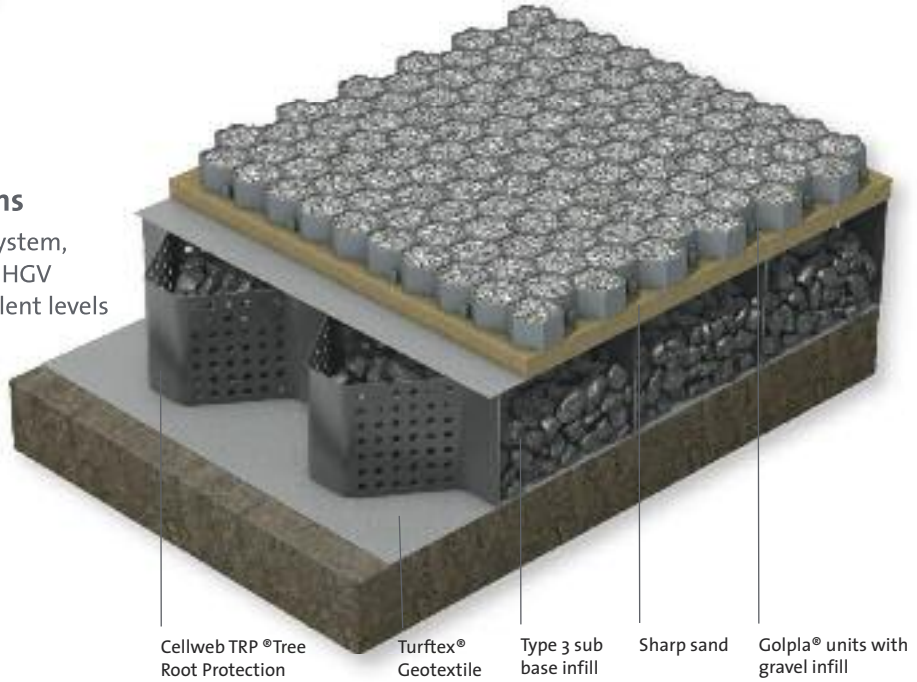


Golpla® Pre-Grown solutions

Pre-grown Golpla® modules offer instant aesthetic solutions for sensitive areas and defined contract completion. Can be accessed much earlier than traditional soil and seeded systems. See page 6

Golpla® Heavy Duty solutions

Combined with our Cellweb TRP® system, Golpla® offers further solutions for HGV trafficked areas incorporating excellent levels of tree root protection. See page 6



Cellweb TRP® Tree Root Protection

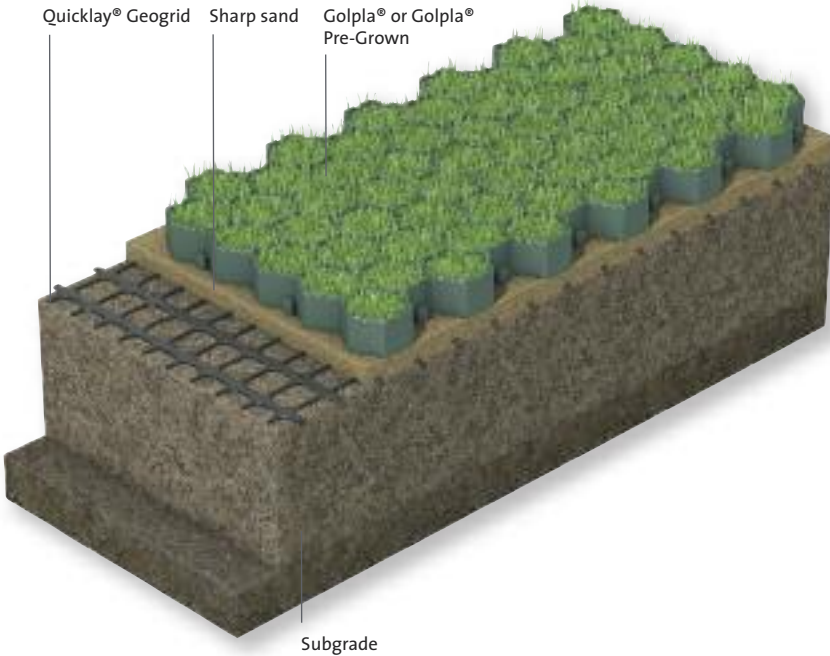
Turftex® Geotextile

Type 3 sub base infill

Sharp sand

Golpla® units with gravel infill

Quicklay® Geogrid Sharp sand Golpla® or Golpla® Pre-Grown



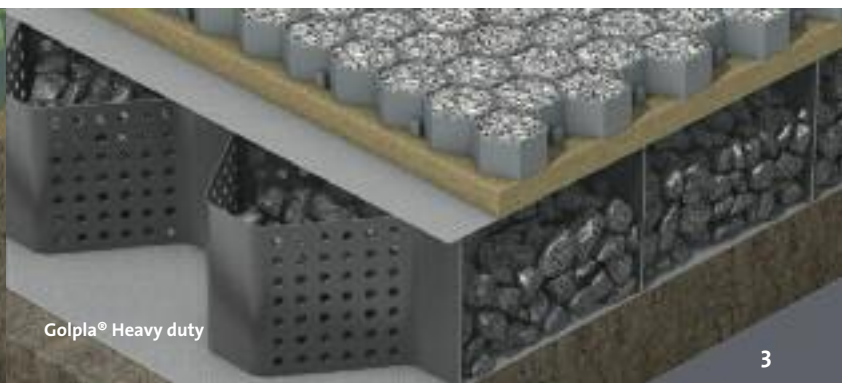
Subgrade

Golpla® Quicklay solutions

The Golpa® Quicklay® solution gives a rapid, no-excavation installation option with permanent or temporary fully stabilised erosion resistance. See page 6



Golpla® Quicklay



Golpla® Heavy duty

Product data

Golpla® modules are precision-manufactured hexagonal honeycombs of rigid, high quality re-cycled polymer that link together to form continuous grass reinforcement and erosion control systems.

Each paver is an integral unit with no incomplete cells. This ensures that there is a double wall at each joint, maximising installed strength. The unique patented interlocking system, permits an even spread of the load and assists the installer in maintaining line and level.

Golpla is manufactured from 100% re-cycled polyethylene and polypropylene, and the raw materials are completely re-cyclable. The materials are tolerant to thermal expansion and contraction during extreme temperature fluctuations. Totally inert, the raw materials will not affect surface water run off or filtered surface water passing through the system.

Standards and compliance

Golpla® complies with the requirements of the Water Management Act 2010. Geosynthetics Ltd are accredited to ISO 9001 Quality Management Systems.

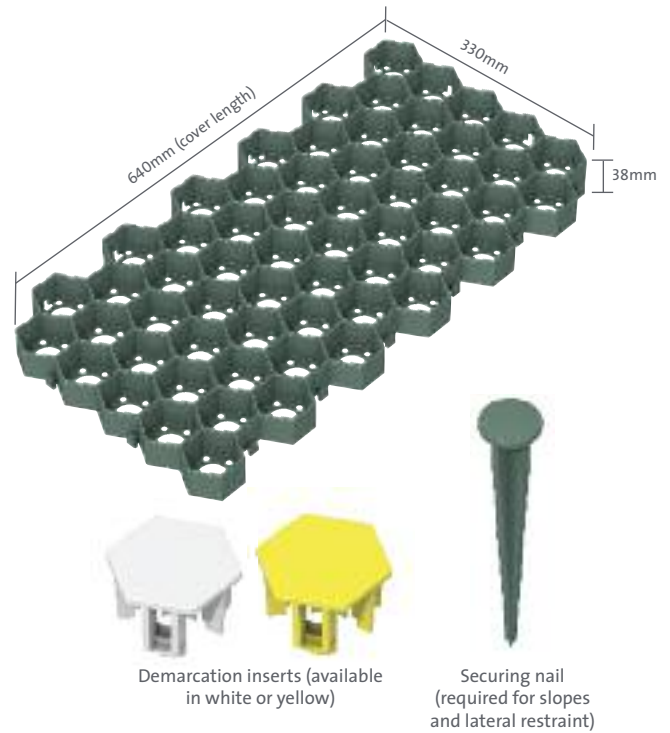
SUDS applications

Golpla® is suitable for inclusion in applications where porous paving, high infiltration are necessary as part of SUDS (sustainable urban drainage system) schemes.

National SUDS standards are implemented where development requires planning consent from a Local Authority Suds Approving Body (SAB), increasingly part of local planning requirements. Golpla® systems help control run off, do not affect water quality and can form part of larger rainwater water collection and discharge systems.

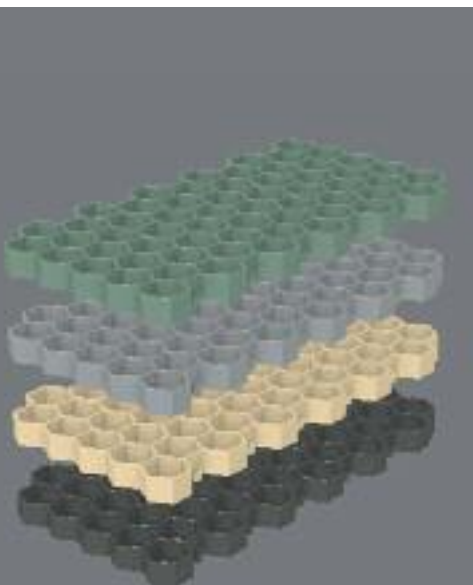
Colour

Golpla® is also available, to order, in a range of colours including Rustic, Dark Grey, Light Grey, Buff, Black or matched to any preferred RAL or Pantone.



Golpla® modules

Nominal dimensions	(cover) length 640 x width 330 x depth 38mm
Modules per m ²	5.45
Weight per m ²	5.5 Kg/m
Colour	Green 9 other colours available (see below)
Cells per module	60 no. cells - (Width 63mm)
Material	UV stable 100%, re-cycled polypropylene (80%) and polyethylene (20%)
Load-bearing capacity	Minimum 100kN/m ²
Standard packaging	Shrink-wrapped on non-returnable pallets, each measuring approximately 1.2m x 1.1m x 0.95m, weighing approximately 180kg and containing 30.83m ²
Golpla® securing nail	245mm long HDPE, round head to fit through base of cells
Demarcation inserts	(white or yellow) hexagonal shape to fit in cell with retaining clip



Golpla® can be matched to any RAL or Pantone colour



Golpla® standard system

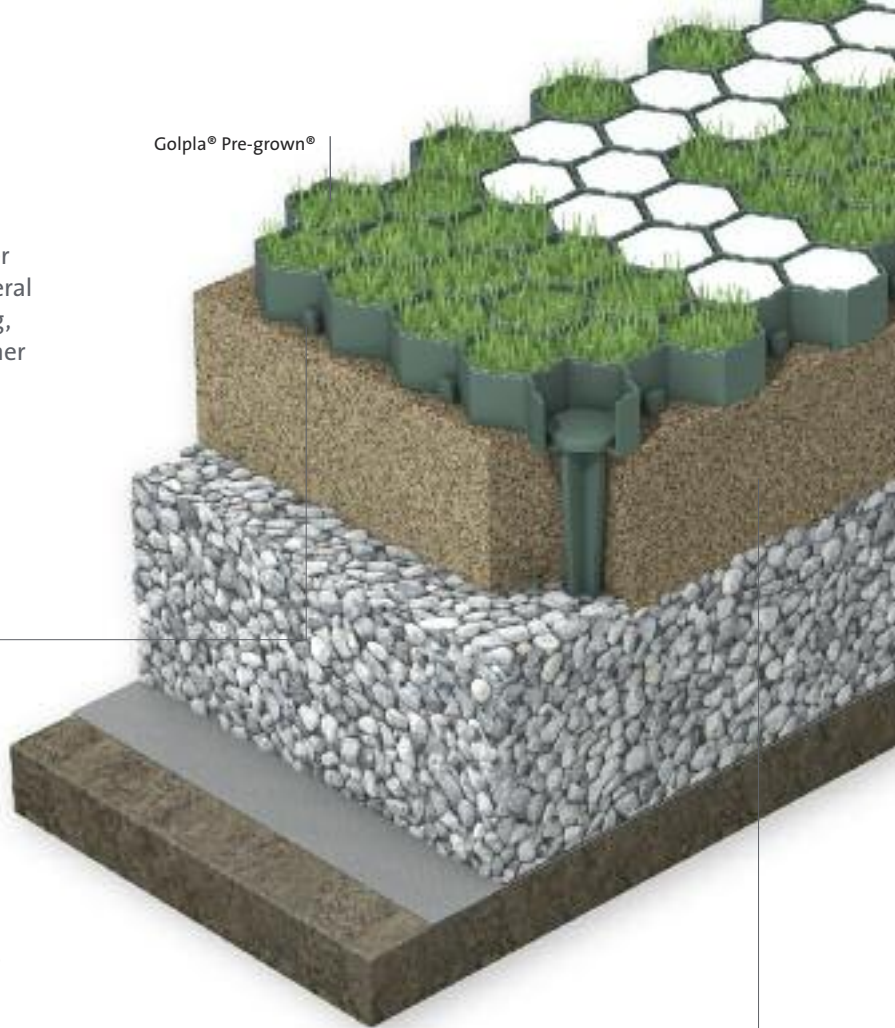
Golpla® is suited to a very wide range of applications and the Pre-grown option allows full usage quickly after installation. The system is ideal for high frequency general trafficking use for all forms of architectural landscaping, including car parking area, lay-bys, access roads and other forms of vehicular hard-standing.

Designing sub-bases for grass

When designing with Golpla®, consider the inherent drainage characteristics of the site, as grass will only thrive on well drained ground. Design of the sub-base is derived from the loads to be carried and prevailing ground conditions. Suitable for both 'Green-Field' and 'Brown-Field' sites, the sub-base will consist typically of a 200mm thick layer of well compacted free-draining stone (MoT Type3) followed by a 100mm layer of Rootzone. Golpla® is then laid and consolidated with a vibrating plate and loose filled with clean friable top soil and seeded. It is important not to overfill the modules or to compact the soil within them.

Designing for stone

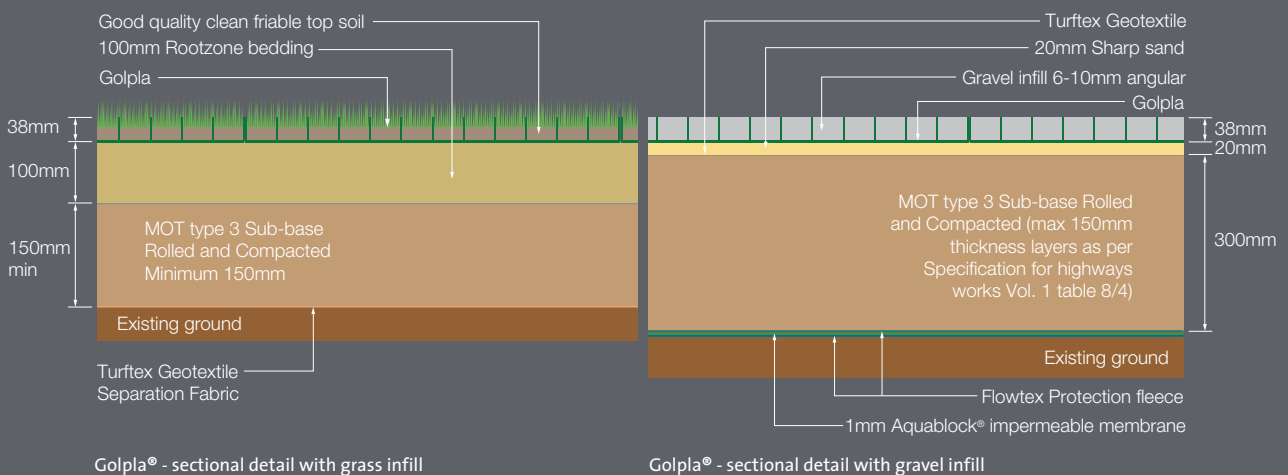
Sub-base for stone retention is subject to load and ground conditions. The sub-base would typically be 200mm (full installation details are available upon request) of well compacted free-draining stone (MoT Type 3), blinded with 30mm of sand followed by Golpla®. The gravel filling should be 6 - 10mm angular stone. To match specific stone infill colours or other aesthetic requirements, Golpla® is also available, to order, in a range of colours including Rustic, Dark Grey, Light Grey, Buff, Black or matched to any preferred RAL or Pantone colouring.



Designing for successful grass growth

As all major seed houses agree, good grass requires a minimum of 125mm of growth medium in which to thrive. Without an adequate depth of growth medium plus the depth of the module, grass cannot survive prolonged dry weather. In the case of car parking this problem is further compounded by the shelter created by parked cars.

Golpla® and Geosynthetics Rootzone are specified together to give the optimal depth to permit excellent grass growth within their depth, at the same time remain stable, and offer one of the shallowest excavation requirements on the market.





Golpla® Pre-grown laid



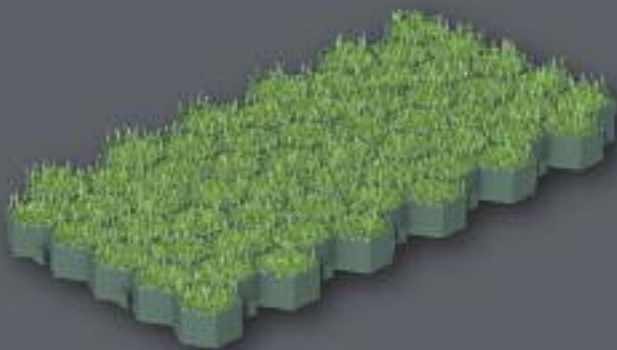
Golpla® Standard (grey units) prior to planting

Golpla® pre-grown system

Uniquely within the grass reinforcement industry, the substantial 'footprint' and enclosed perimeter cells of Golpla®, enable Geosynthetics Limited to supply pavers pre-grown with established grass. Produced to order by a leading turf grower, Golpla® Pre-grown provides instant results for environmentally sensitive areas, commercial refurbishment etc, and accelerates contract completion.

Golpla® Pre-grown is only available in pavers size 640mm x 330m x 38mm deep and can be used for conventional installations, as well as the Golpla® Quicklay® (no-dig) system.

Base specifications are dependent on the soil type and strength of sub-base on site. Consequently, the design must be tailored for each individual project, for which full guidance is available.



Key benefits

- Gives instant aesthetics
- Defines contract completion
- Eliminates soiling and seeding
- Is professionally grown
- Area available for use in shorter time frames
- Is weed free
- Reduces construction time
- Reduces post installation watering
- Reduces risk of vandalism

Golpla® Quicklay® system

Developed by Geosynthetics Limited, the Quicklay® system is changing the way the industry converts existing grassed areas into access roads, car parks, tow paths etc. Quicklay® construction requires no excavation and therefore no need for heavy machinery, or lorries for removal to tip and no Disposal Tax.

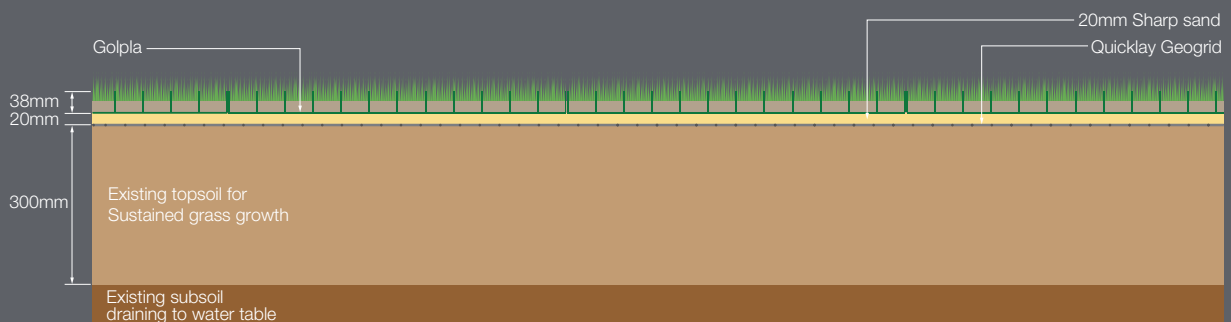
The site is prepared by removal of all vegetation and making good. The appropriate Geogrid (specification according to site conditions) is laid and blinded with coarse grit sand. Golpla® modules are then laid, secured, soil-filled and seeded, with edges feathered down to the surrounding grass.

If required to retain existing ground levels, 60mm of turf may be removed as an alternative preparation.



Key benefits

- Quick construction
- Minimal surface preparation
- No heavy machinery needed
- Very little waste, if any, to tip
- Easy access to underground services
- Quicker re-establishment of grass
- Site can easily be cleared and returned to original condition





Cellweb laid and infilled in preparation for Golpla®

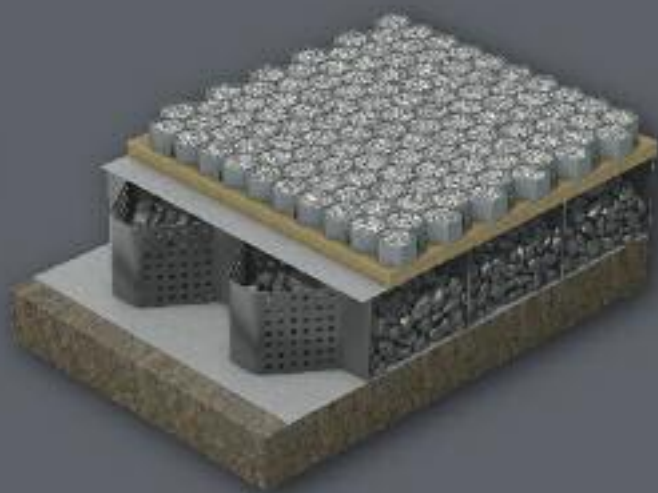


Golpla® Standard at Boscastle, Cornwall

Golpla® heavy duty (Cellweb®) system

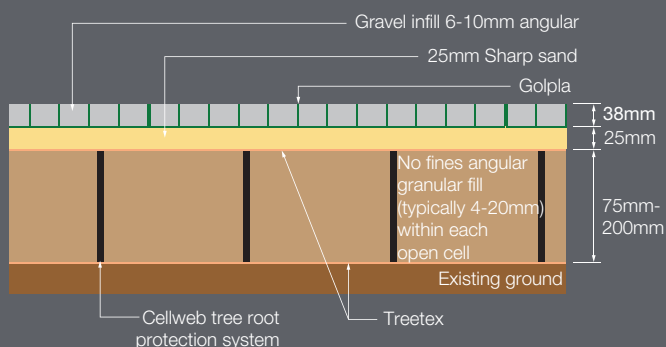
For HGV traffic or emergency access areas, the incorporation of Cellweb® cellular confinement system beneath Golpla® will support HGV loads and heavy traffic.

Alternatively, Cellweb TRP® (Tree Root Protection) will additionally protect tree roots from the damaging effects of compaction and desiccation whilst maintaining a stable load-bearing surface for traffic.



Key benefits

- Reduced excavation situations
- Tree root protection system
- Improved drainage
- Reduces ground compaction
- Suitable for weak ground conditions
- Reduced sub base thickness
- Excellent lateral stability



Case study 1: The Greys Court Estate

Client:	The National Trust
Specifier:	The National Trust
Landscape contractor:	MJ Abbott
Project details:	Increasing popularity necessitated improvements to the car park, the design of which had to blend in with the green field surroundings and be hardwearing and suitably resilient to stand up to 500 visitors cars per day.

Golpla® Pre-Grown provided a reinforced, living grass surface which suited the natural aesthetics of the site and could be installed during the worst of the winter weather. Combined with open graded stone filled Cellweb® for the roadways, the system allows excellent natural drainage.

The grass in the Golpla Pre-Grown was well established by the time the site re-opened in the Spring, demonstrating how well it can reduce construction time, allow work to take place outside seasonal norms and achieve usable surfaces far sooner than traditional soil and seed methods.



Case study 2: **Boscastle visitor parking**

Client:	Carillion Regional Civil Engineering
Contractor:	Anzac Construction
Application:	Car parking area laid to grass and gravel
Location:	Boscastle, Cornwall
Project details:	4000m ² Golpla modules manufactured in black at client request

Following serious flooding in 2004, part of the major flood prevention scheme, entailed construction of a new car park on land in the town centre owned by the National Trust.

Whilst recognising that visitor car parking in this busy tourist town would, of necessity, need to be robust and hard wearing, the Trust were anxious to use natural materials and quickly establish grass cover. Geosynthetic's Golpla[®] ground reinforcement system was selected by the main contractor, Carillion, and approved by the client, their representatives (Halcrow) and the National Trust as the ideal combination of robustness, simplicity and speed of installation, and long term durability and sustainability.

Maintenance and repair

For gravel applications, almost no maintenance is required. Over time, a small amount of weeds or grass may become established in some cells, but this is easily treated with a dose of weed killer annually.

In grass applications, maintenance is as for lawns or other areas laid to grass: fertilise in the spring and again in the autumn with a reputable granular fertiliser following the manufacturer's instructions.

Cutting of grass is with any conventional lawn mower. In trafficked areas, the grass will remain short and in less used areas, will grow longer.

Golpla[®] design service

Geosynthetics provide technical support on all Golpla[®] projects from concept design right through to the construction phase. We are able to offer site specific design solutions to provide our clients with the most cost effective and environmentally sympathetic solutions. Our engineering department can provide preliminary calculations and CAD details showing a range of CBR build ups for each of our design proposals.

On site support

Geosynthetics Limited now boasts the largest product range of its kind in the UK. Fully conversant in all Golpla[®] solutions as well as other associated products – from geotextiles, geogrids and geocells to gabions – our well-trained staff are always available to discuss the technical merits of Golpla[®] and to advise which solution would be most suited to a particular application.

Large stock holding and next day delivery

We hold 20,000 Golpla[®] Standard units in stock and next day delivery of any quantity, direct to site throughout the UK is central to the company's customer service policy. Orders for Golpla Pre-grown are processed to synchronise with the site installation schedules so that the right quantities of palletised product are available at all times.

Other Geosynthetics Limited systems

Geosynthetics offer the most comprehensive range of soil stabilisation, erosion control, drainage and environmental protection solutions in the UK. Many of these systems can be used in projects along with Golpla, to provide solutions for heavy trafficked areas and tree root protection.

Many more solutions are available from Geosynthetics Limited. Please contact us for further advice.

Approved contractors

Geosynthetics Limited have a register of fully competent contractors who will undertake your entire project.

www.geosyn.co.uk



Geosynthetics

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