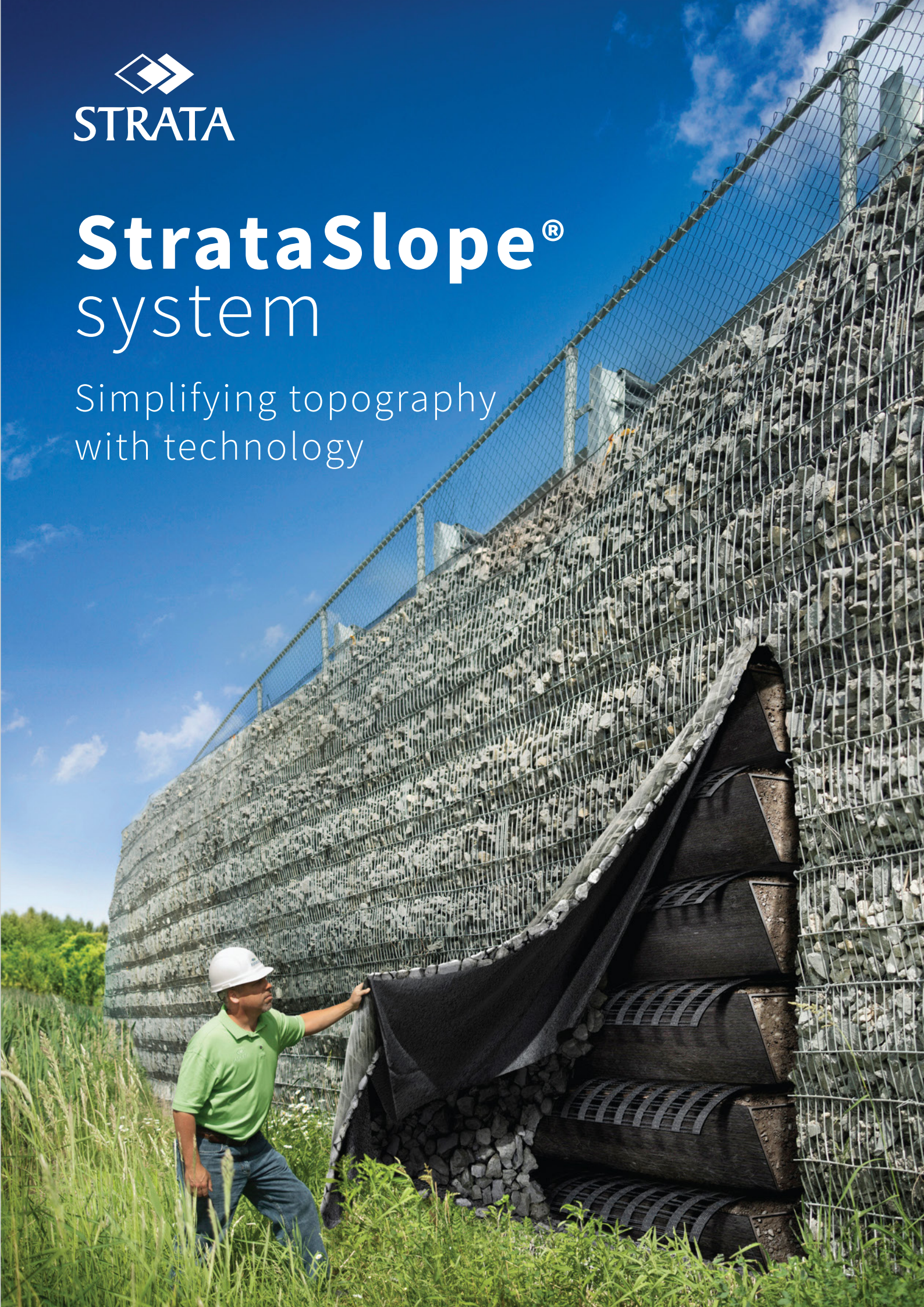
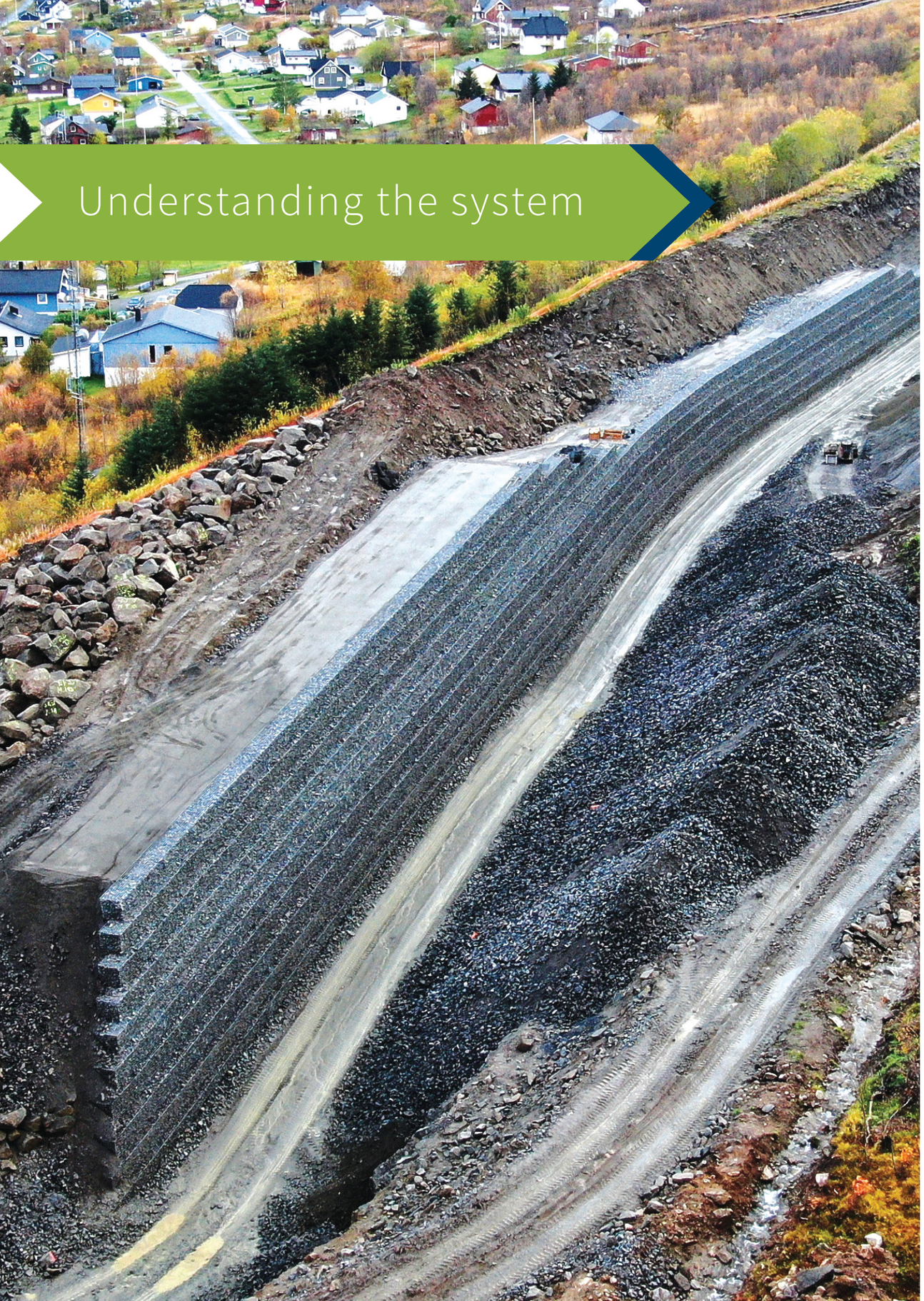
STRATA

StrataSlope® system

Simplifying topography with technology





Understanding the system

By adopting our globally experienced technical design resources, project management to site consultation and supervision, the StrataSlope® system is a cost-effective, environment friendly, and sustainable solution for your geotechnical or geo-environmental project. The Strata technical team will be your companion from project commissioning, through to detailed design and onward to the end of the construction.

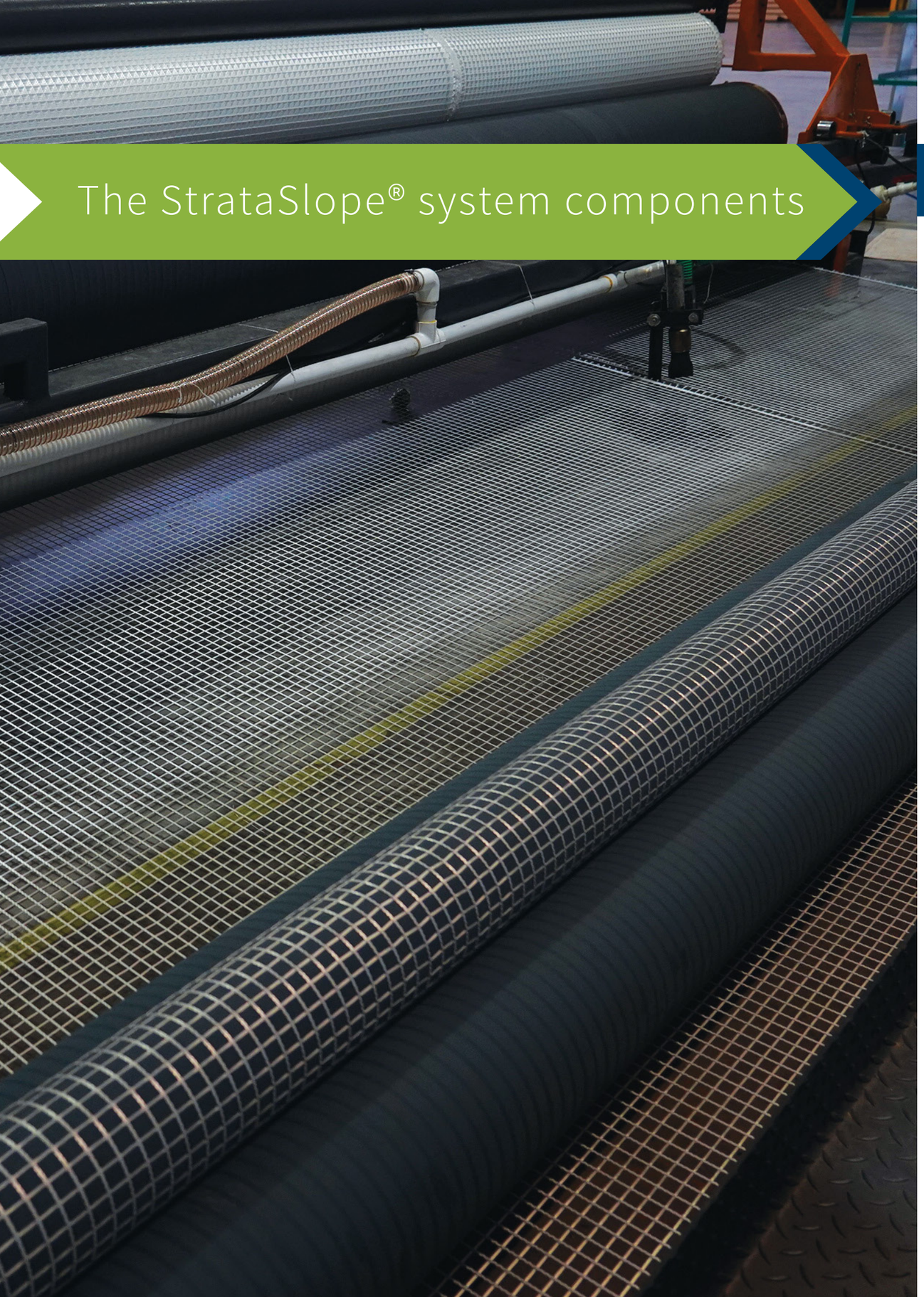
Harnessing the power of the tremendous trio; StrataGrid™, StrataWeb®, StrataSlope® systems along with other proprietary products, ensures that a technical solution is provided for all soil types and any topographic challenges. Be it unfavorable soil conditions for mining, highways, landfills, railways, or land development, Strata Geosystems have developed to provide our clients with cutting-edge designs and extremely economical solutions.

The system incorporates certified high-quality, knitted geogrids, and geocell materials with various face-type options, which provide global structural stability and erosion-resistant systems. We work with all international accredited design standards that offer a design life of up to 120 years while providing a multitude of aesthetic solutions.

Why StrataSlope® system?

- **An improved, economically-designed option as compared to steel-reinforced concrete structures**
- **High engineered tolerance for total or differential settlements in a variety of soil types**
- **Multiple faces finish types like green vegetation and architectural stone face**
- **Rapid and hassle-free installation procedures enabled by detailed Strata construction drawings**
- **Eco-friendly, which minimizes impact on areas like wetlands and natural habitats**
- **Exceptional structural designed capacity (i.e. 70˚ reinforced slopes, exceeding 30 m vertical heights)**
- **A system that can adopt sustainable re-use of site-won fill materials such as cohesive clays, residual souls and waste products such as coal ash and steel slag**

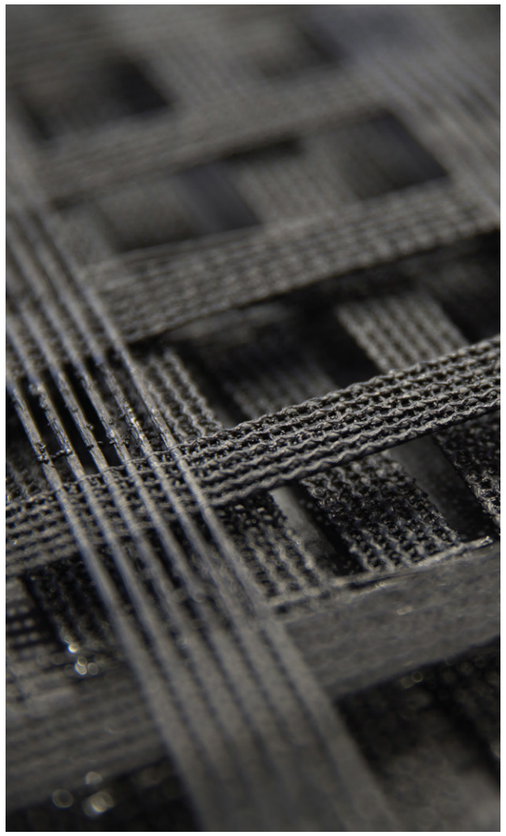
The StrataSlope® system components



1 Geogrid

Our global experience in manufacturing and construction helps us design innovative systems for our clients and consultants. One such result of this is StrataGrid™ geogrids, which are at the heart of every Geosynthetic Reinforced Structure (GRS). It is manufactured using premier quality polyester fibers coated with a proprietary UV saturation coating which enables enhanced durability against the in-soil conditions. It is thoroughly tested in leading labs across the U.S. and U.K., and meets the global standards necessary to provide the best performance.

StrataGrid™ geogrids are the main element in providing adequate tensile strength that is required to accommodate the forces arising in critical soil structures. Our solutions provide both technical and commercially viable designs to make previously unusable land usable. Our latest SGU series provides industry-leading stress-strain values having a width of 5.7 m to minimize site wastage and improve project progress.



Benefits:

- High stress-strain values with low elongation
- Wide width options up to 5.7 m available
- Fully tested with NTPEP, CE, ISO, and BBA certifications
- Available in strengths from 35kN/m to 600kN/m
- Quicker installation as compared to rigid grids
- Hassle free handling guaranteed due to our proprietary coating
- Top notch manufacturing capacity to meet project deadlines

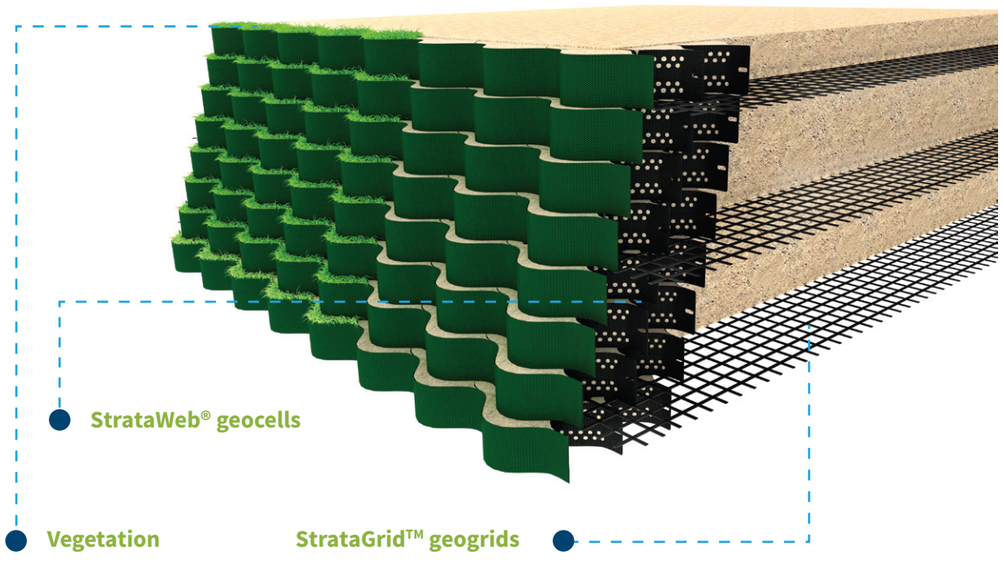
2 Reinforced soil systems’ fascia types

A major advantage of Strata’s Geosynthetic Reinforced Soil (GRS) system is that they offer highly geotechnical designed structures which have technical and commercial advantages over traditional techniques. Our systems are designed according to international standards and offer a long term design life of 120 years and quality controlled system installation.

Benefits:

- The most cost-effective solution for global clients and consultants
- Allows the use of marginal site-won cohesive soils for sustainable re-use
- Steep slopes which reduce the structural footprint area, thereby reducing material requirements
- No foundation necessary
- No limit on the structure height, even up to 100 m high
- High resistance to settlement and deformation of green face structures
- Lower truck movement, resulting in less CO_2 emissions
- Fast quality controlled installation, rapid project progression

a StrataSlope® G Web



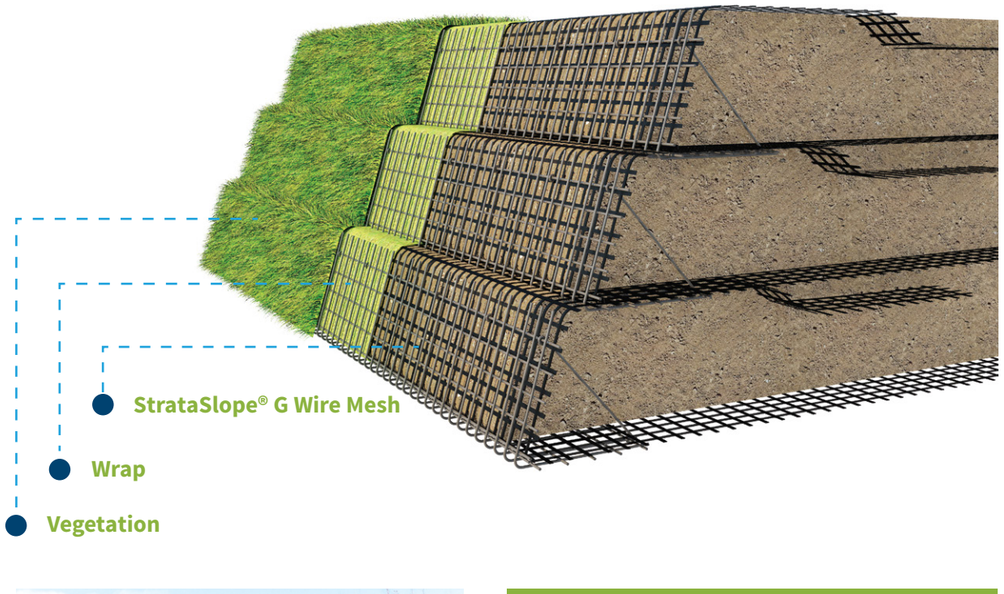
StrataWeb® fascia system consists of flexible geocell panels as fascia elements and StrataGrid™ geogrids. Depending on the project requirement, their ideal usage is in 3 or 4 cell wide panels for fascia.

StrataWeb® fascia system's biggest advantages are that it comes in a collapsible form (easy transportation) and the installation can be carried out by unskilled labour. Not to forget the aesthetics, the outermost strap of the StrataWeb® panels used as fascia can be made in green colour to match with the lush greenery around.

Benefits:

- Flexible in nature, allowing any type of alignment and curvatures
- Full 120-year design life
- The collapsible form allows easy construction in difficult terrains
- Availability in different colours to merge with the surrounding
- Strong and durable HDPE fascia material provide longer service life to the structure against UV

b StrataSlope® G Wire Mesh



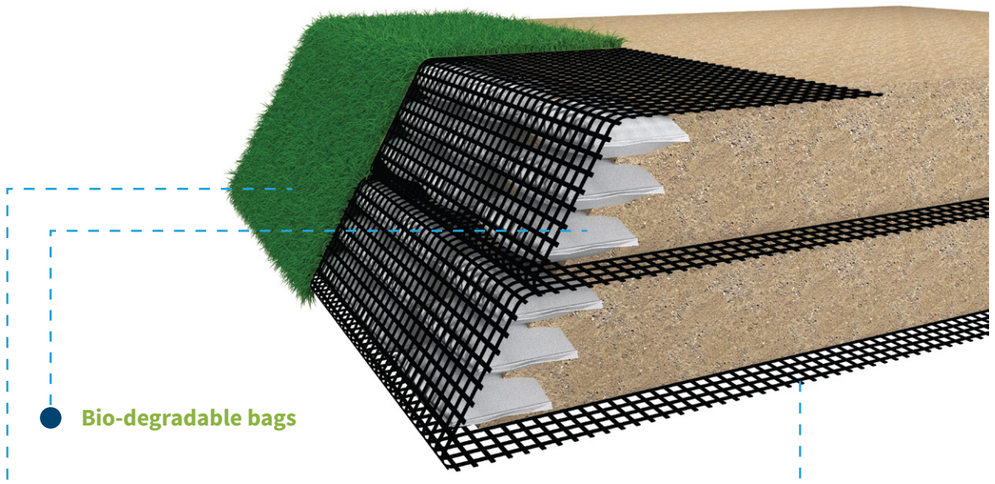
The wire mesh is welded and allows rapid construction of reinforced soil structure with steel forms.

How does it work?
A wrap of jute/coir or similar vegetation supporting material is placed along with the welded wire mesh. The vegetative soil behind this helps in rapid growth of the vegetation to provide the desired green finish. The mesh elements are sacrificial in nature and once the sustainable vegetation growth is achieved, the fascia becomes self-sufficient.

Benefits:

- Elements can be prefabricated to site requirements (galvanized mesh, size, and shape)
- Long lasting vegetation provides a green natural look
- Fascia elements can be used for the construction of structures as steep as 80^0
- Suitable for permanent structures, with a design life of 120 years
- Hard but flexible fascia provides support to the structure with a strong vegetated root-zone

c StrataSlope® G Wrap

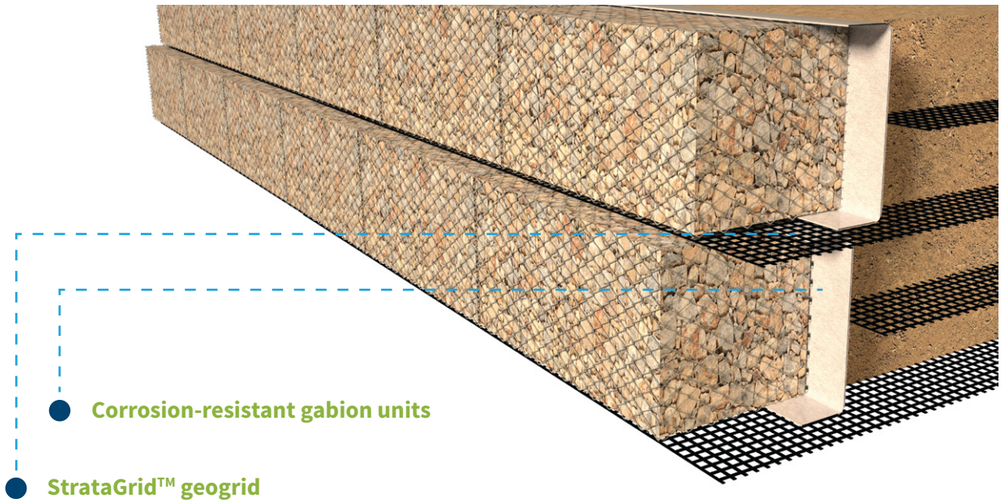


The StrataGrid™ geogrid is wrapped around bio-degradable bags that are filled with vegetative fertile soil and seeds. These bags allow the vegetation to grow through them and provide a sustainable long-term vegetative slope to the reinforced soil structure for a 120-year design life.

Benefits:

- Rapid and easy construction
- Flexible and efficient, to be used for temporary as well as permanent structures
- The bags require no necessary skill to be placed
- Very easy usage for structures with an inclination of 50^0 to 70^0

d StrataSlope® R-Gabion

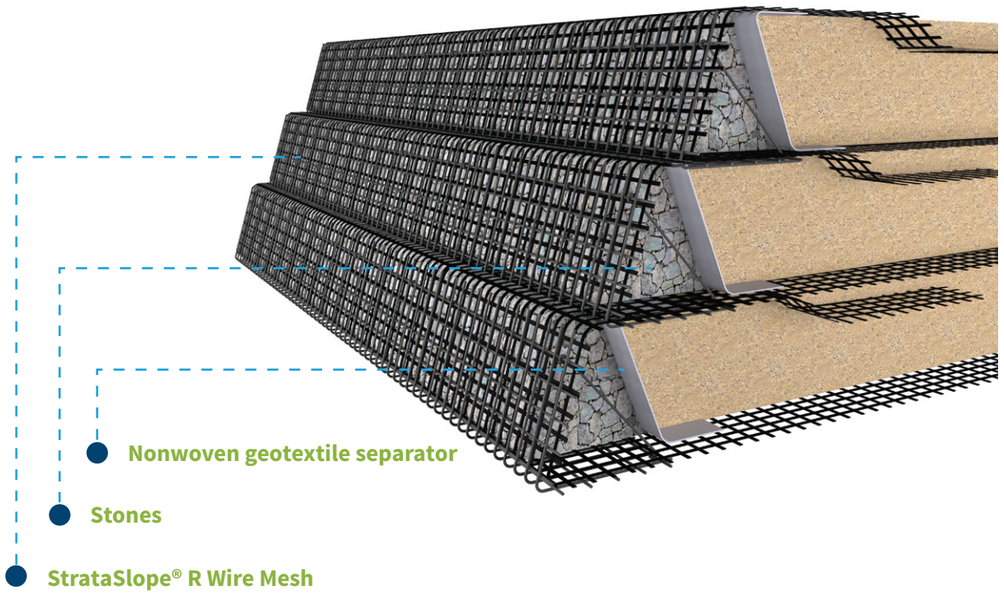


The Gabion fascia system consists of StrataGrid™ geogrid layers along with corrosion-resistant gabion units. These are typically 1 m in height, but can be altered according to project-specific requirements. These fascia elements are installed on-site and then filled with stone.

Benefits:

- Suitable for waterfront structures
- Strong and flexible fascia elements
- Inclination of up to 90^0 supported

e StrataSlope® R Wire Mesh



Whatever the site requirement demands, the welded mesh wire fascia is prefabricated to cater to it. It allows the rapid construction of the reinforced soil structure with steel forms. To ensure that no backfill material loss through stones takes place, a separator nonwoven geotextile is supported behind the stone.

These fascia elements are flexible and adapt well with the alignment of any project.

Benefits:

- Front facade filled with stone for an architectural face finish
- Fast construction and architectural face
- Can be tailored for >120 years design life
- Construction of the structure as steep as 80^0 possible

f StrataSlope® $<45^0$

For this structure, no fascia elements are required for slopes that are flatter than 45°. The said slopes require only StrataGrid™ reinforcement that extends to the face and can be supported with the provision of a vegetative cover that helps prevent erosion.

Something as simple as the use of a green mat is required to obtain the vegetative cover. For a more solid solution, the StrataWeb® erosion protection system can be placed on the face of the slope.

Benefits:

- Fast construction and architectural green face
- Can be tailored for >120 years design life
- The StrataGrid™ vertical spacing can typically be 0.50 m - 1.00 m, which offers an economical final system

3

Sustainable re-use of reinforced soil fill materials

Our globally experienced civil and geotechnical engineers are the key drivers for our international efforts to achieve sustainable development methods for reinforced soil structures. The mission is not only to empower local communities' local infrastructure with sustainable methods, but also to ensure an ecological balance by the re-use of soils.

We take pride in our approach, which is to follow the 'three pillars of sustainability' for environmental, economic, and social impact.

Why sustainable re-use of soil matters

Environmental impact

- Reduced carbon emissions
- Less natural rock/aggregate quarrying for infrastructure
- Minimal landfilling of waste soils

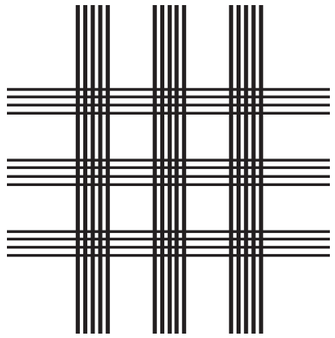
Economic impact

- Cost savings via reuse of waste soils
- Cost effective solutions for clients
- Reduction in truck movement from traditional quarries
- Large reduction in transport costs
- Limited landfill costs

Social impact

- Less transportation leads to less pollution
- Reduced road pavement damage

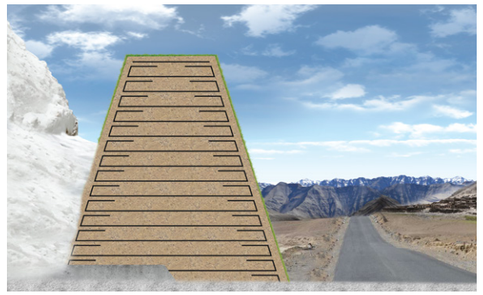
StrataSlope® geogrid reinforced soil technology



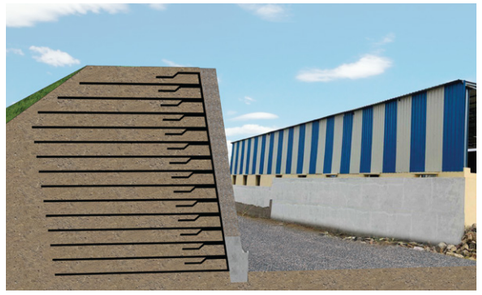
The international design standard for reinforced soil structures calls for the use of various fill types. In practicality, it stipulates geo-materials such as granular angular aggregates and sandy gravels. These possess high angles of friction, are free draining, and their particle size distribution is limited due to regional regulations.

Thus, Engineering ruling bodies around the world are now advocating the usage of sustainable technological applications, and StrataSlope® in fact, is an example of such a technology. Geosynthetic solutions typically pave a way for the use of site-won classified soils and waste geo-materials such as coal ash, steel slag, and recycled concrete. We understand and implement the importance of having a high quality soil testing regime supported with a detailed construction quality control document.

Applications



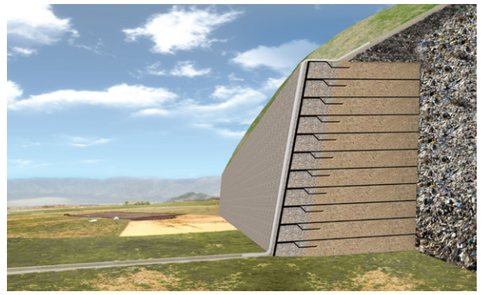
Avalanche bunds



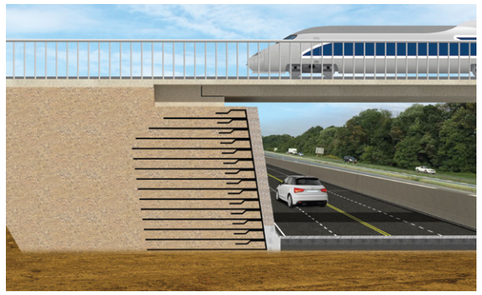
Industrial/commercial buildings

Railway embankments

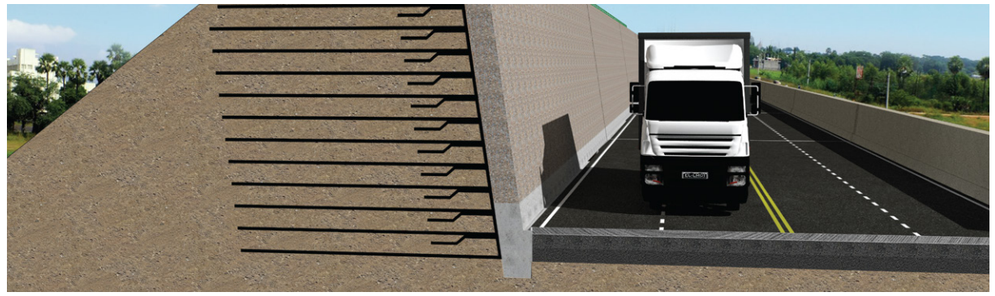
Temporary platforms



Tailing dam extensions



Highway embankments



Acoustic bunds

Strata services

Technical design

Our skilled engineers assist design consultants and clients by providing verifiable design calculations that comply with international design codes of practice.

Technical consulting
Our mission is to provide cost effective sustainable solutions and viable product specifications that are customized to clients' needs. Our exclusive experience helps provide progressive and innovative ideas.

Project specific construction drawings
Our global team consists of professional CAD personnel that are well equipped to provide full project drawings for successful construction and detailed method statement for Construction Quality Management.

Global experience and knowledge transfer
All global members of our senior management team have extensive international experience in system design and construction methods. We always strive to offer the best practice solutions and techniques.

Product and specification services

Customized design products
Continuous and close partnerships with our clients are explored to develop the necessary bespoke geosynthetic products and model specifications.

Variable alternative solutions
In addition to services like cost optimization recommendations, we can also provide alternative bespoke design solutions.

On-site project services

Installation aids and products
Our constant aim to expedite project programs are made possible by general contractors, and practical installation aids that facilitate the application of Strata products.

On-site application instruction
Strata's application technicians are always available to provide on-site installation assistance.

Strata training
Our training team offers full product and application instructions, and guidance.

Strata technical documents

Certificates and approvals

All Strata products and systems range have a number of international certifications and approvals issued by credible independent bodies such as British Board of Agreement (BBA, U.K.) and National Transportation Product Evaluation Program (NTPEP, U.S.A.).

Strata is routinely involved in industry associations and construction federations that promote the development of national standards. Strata employees are members of various technical committees within ASTM, Geosynthetic Institute (GSI), National Concrete Masonry Association (NCMA), Indian Roads Congress (IRC), Central Road Research Institute (CRRI), and the International Geosynthetics Society (IGS).

Tender proposals and documents

Strata has an extensive experience of a partnering approach with large general contractors, especially on 'design and construction' projects. We provide full designs, full specification proposals and bill of quantities for project specific tender documents.

Technical guidelines and method statements

To ensure smooth installation of Strata products, our team is available to offer full technical guidelines like site specific method statements.

Strata Global
From soil to structure


Norway


India


USA


Bulgaria


Brazil

Strata is a global leader in geosynthetics manufacturing, geotechnical engineering and construction, delivering innovative products and solutions for an array of site development challenges worldwide.

Strata's products are manufactured according to international quality standards, backed by globally recognized design, engineering, and technical support services. Strata also offers construction and general contracting capabilities in select global markets.

Operational excellence

- Tested through GAI-LAP accredited laboratories, both in-house and through independent third-party locations: TRI (USA), BTTG (U.K.), BTRA (India)
- NTPEP certified
- Conforms to ASTM, ISO, and GRI testing standards

Sustainability

- Committed to long-term sustainability
- Reducing project carbon footprints by saving on concrete, quarrying, and transportation

People

- 400+ total associates
- 200 technical engineers
- 35+ technical designers
- Seasoned general and sub-contractors
- On-site supervision available for select projects

Established 1994

Global offices

- USA
- India
- Brazil
- U.K.

Certifications

- ISO
- CE
- NTPEP
- GAI-LAP accreditation
- BBA
- NABL

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