



**Did you know?**

**Did You Know... choosing geosynthetics offers the best of both worlds in cost effectiveness and sustainability.**

There is a common misconception that sustainable solutions for infrastructure will cost more. This is not so in the case of geosynthetics. In reality, many geosynthetics solutions were developed to provide financial benefits and only later did the huge energy savings and environmental benefits become obvious.

The cost savings associated with geosynthetics can be demonstrated in the following key ways:

**Significant reduction in construction time**

Many geosynthetic solutions involve the replacement of other bulk construction materials. Using geosynthetics to strengthen infrastructure and supply drainage and barrier functions means a massive reduction in aggregate use. These reductions are combined with economic savings on both the purchase and transport of aggregate, soils and sand; typically this alone covers the cost of the geosynthetic.

Additionally, the reduction of onsite activity associated with the excavation of in-situ material and the placement and compaction of the soils and aggregates offers further cost and environmental savings. Similarly, these benefits also apply to the replacement of clay by impermeable geosynthetics in landfills, ponds, dams and reservoirs.

**Immediate usability**

Another key example is the replacement of concrete retaining walls with geosynthetic reinforced soil structures. While concrete structures typically need to be constructed in panels with associated shuttering and curing time, reinforced soil walls and embankments can be rapidly assembled and ready to carry surcharge loads (like roads and railways) immediately.

Add to this the lower cost of the geosynthetic and soil fill compared to reinforced concrete, and construction program periods and associated overheads are far reduced.



**Reinforced Concrete Wall**



**Geosynthetic-Reinforced Wall**



## Less long-term maintenance

Geosynthetics can make valuable and significant contributions to the lifespan and therefore long-term maintenance costs of a project. For example, the use of geosynthetics in road pavement sections has been shown to extend design lifespan and dramatically reduce maintenance costs and frequencies. Similarly the application of geosynthetics in rail ballast has proven to significantly extend periods between maintenance visits.

These examples clearly respond to many of the 17 UN Sustainable Development Goals such as responsible consumption and climate action, but more specifically for economic growth.

If the construction and maintenance of infrastructure is more efficient, then more investment capital is available for additional projects to help drive economic growth. For example, the simple addition of a rail line extension or construction of a resilient and durable road could help improve the lives and prospects for entire communities, now and in the future.



**Geosynthetic solutions should be fully investigated on every infrastructure project to ensure they meet the needs of the present without compromising the ability of future generations to meet their own needs.**

Find out more about how geosynthetics are making a difference by downloading the IGS Sustainability eBook [here](#) or visiting our Sustainability [page](#).