

Steel roofing turns green into gold

As South Africa makes urgent moves towards sustainability, construction plays a very important role, not only because of its economic and social contribution, but also because of its impact on the quality of the lives of all, particularly those who are economically vulnerable, explains Sally Stromnes.

Globally, the building industry provides 5-10 percent of employment and generates between 5 and 15 percent of its GDP. On the negative side, the built environment accounts for 40 percent of energy consumption, 40 percent of CO2 emissions, 30 percent of the consumption of natural resources, 30 percent of waste generation and 20 percent of water consumption. The challenge for the global construction industry is to meet the world's growing needs while also limiting the downstream impact of its activities. Steel is becoming increasingly important as a material of choice; it offers a wide range of solutions that make buildings more energy efficient, less costly to construct and occupy, and therefore more sustainable.

Steel roofing offers solutions for greener buildings

Steel as an ideal construction material

Steel's high strength-to-weight ratio reduces a building's environmental impact and conserves natural resources, requiring less material than traditional construction technologies.

Steel roofs allow for easy integration of green technologies

Water harvesting is more hygienic off a shiny, smooth surface (such as steel) than off a surface which harbours dust. Steel roofs also provide a high degree of efficiency in the installation of solar heating panels, and are entirely watertight when junctions are sealed.

Steel is the most recycled material in the world.

It is 100 percent and indefinitely recyclable, without any quality loss. Recycled steel represents 40 percent of the steel industry ferrous resource in the world.

Aside from its green credentials,

steel is also fire retardant and provides a high degree of personal safety for occupants. It is estimated that about 15 percent of burglaries take place through a tiled roof. In all manner of ways, steel is gaining momentum as the roofing material of the future.

Steel roofing works wonders in low-cost housing

In the South African property and construction sector, government is the country's biggest player, both as a consumer and a regulator. In addition to public buildings and offices, government can make a significant difference in many ways if it incorporated green building elements into low-cost housing developments, affording greater comfort and lower costs to those who can least afford to foot high energy and water bills.

Simple interventions, such as building orientation and the construction of an effective building envelope, can make considerable differences to the energy consumption and quality of life of inhabitants.

Steel can provide more comfortable housing

Steel roofs are the first line of defence against the elements, and can contribute to a thermally-efficient building envelope. In winter, a high proportion of energy use is devoted to heating. Steel roofs can be very effectively insulated directly under the exo-surface, increasing the performance of the roof.

In summer, a good roofing design, with deeper eaves, can considerably reduce the absorption of heat on west-facing walls. Steel, being light yet strong, is particularly versatile in design terms.

Steel roofing is highly reflective and is available in light (cool) colours which absorb less heat. Steel also holds less heat over a period of time. Steel roofing is up to 4 percent cooler than clay or fibre cement roof coverings.

Government is going green in meeting its national objectives

In partnership with the Council for Scientific and Industrial Research (CSIR), the Department of Public Works (DPW) has developed a Green Building Framework. This is intended to inform a government Green Building Programme and a South African rating tool for public green building. The rating tool will take into account key government imperatives, such as sustainable building, job creation, development in underdeveloped areas, enterprise development and social cohesion.

The Green Building Framework will also seek to introduce a green building skills development and training programme, enhance research and development on the subject and establish centres of excellence on green buildings. This is a wonderful and exciting case of working towards 'a better life for all'.w



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