

## Specialist Knowledge Meets Innovation

*Local Engineering And Construction Company Develops Unique Formwork Solution For Dome Structures*

Durban-based engineering company, NOVARC, has developed a safe, fast and cost-effective formwork solution for concrete dome structures and reservoirs.

Developed during successful implementations on reservoirs in Pietermaritzburg, KwaZulu-Natal and Thabazimbi, Limpopo, this innovative solution seeks to lower safety risks and improve quality assurance, whilst saving both time and money – key drivers in any construction project.

*“It was during these projects that we recognised a gap in the market for a more innovative dome formwork system, and we began putting our heads together to come up with our own unique design,”* says Scott Armstrong, NOVARC Director.

In traditional dome construction, the scaffolding and formwork requirements are immense and in the cases where a straight formwork system is used to form a three-dimensional curved surface, the results are often inaccurate. NOVARC’s unique truss system drastically reduces the support scaffolding requirements, as well as ensuring that the dome formwork creates an accurate and uniform shape.

Truss members are preassembled on site and then erected in position by a mobile crane, reducing the risks associated with individuals working at heights. With the formwork being-designed to fit exactly, no on-site patching is required, resulting in a high-class, smooth finish to the dome. The dome roof is then cast in-situ, with the designed structural life span exceeding 50 years.

*“Our core product is our innovative solutions for construction,”* says Mark Nott, NOVARC Director, *“This solution dramatically reduces the equipment required in dome construction, which in turn, reduces the amount of temporary support work that must be hired/purchased and erected/disassembled. In all, this reduces labour requirements and leads to a time and cost saving on a project.”*

*“When looking at the systems provided by our competitors in the industry, it became clear that there was huge room for improvement,”* continues Armstrong, *“We came up with a system that requires less equipment and we supply this system to our clients as a complete package. Our system also offers other benefits to the client that save time and minimise risk. We are convinced that once a client has used our system, they will never look back.”*

By their very nature, domes rely on geometry for their structural integrity; flat spots on a dome have a substantial effect on this integrity. Thus, the accuracy of the formwork is the most critical factor in the successful construction of a dome.

*“Only our system can ensure the required levels of accuracy through using curved formwork specially designed for a dome and not a makeshift solution based on a system using flat slabs,” says Nott, “The accuracy of our formwork ensures that concrete can be placed to exact thickness. This results in a direct cost saving as other flat systems cause varying concrete thickness. A mere 20mm inaccuracy in the formwork can lead to an additional 20% concrete requirement on the dome. This is a considerable extra cost to the contractor.”*

NOVARC’s members have specialist knowledge in concrete and quality formwork, and 30 years’ combined experience constructing potable water treatment works, water reticulation pipelines, sewer and industrial waste treatment works, concrete reservoirs, bridges, water towers, medical waste treatment facilities, shopping centres, clinics, healthcare facilities and more.

Find out more:

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