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THE LEADING SAUDI TRADE MAGAZINE

# COVER STORY

## TREVI ASC

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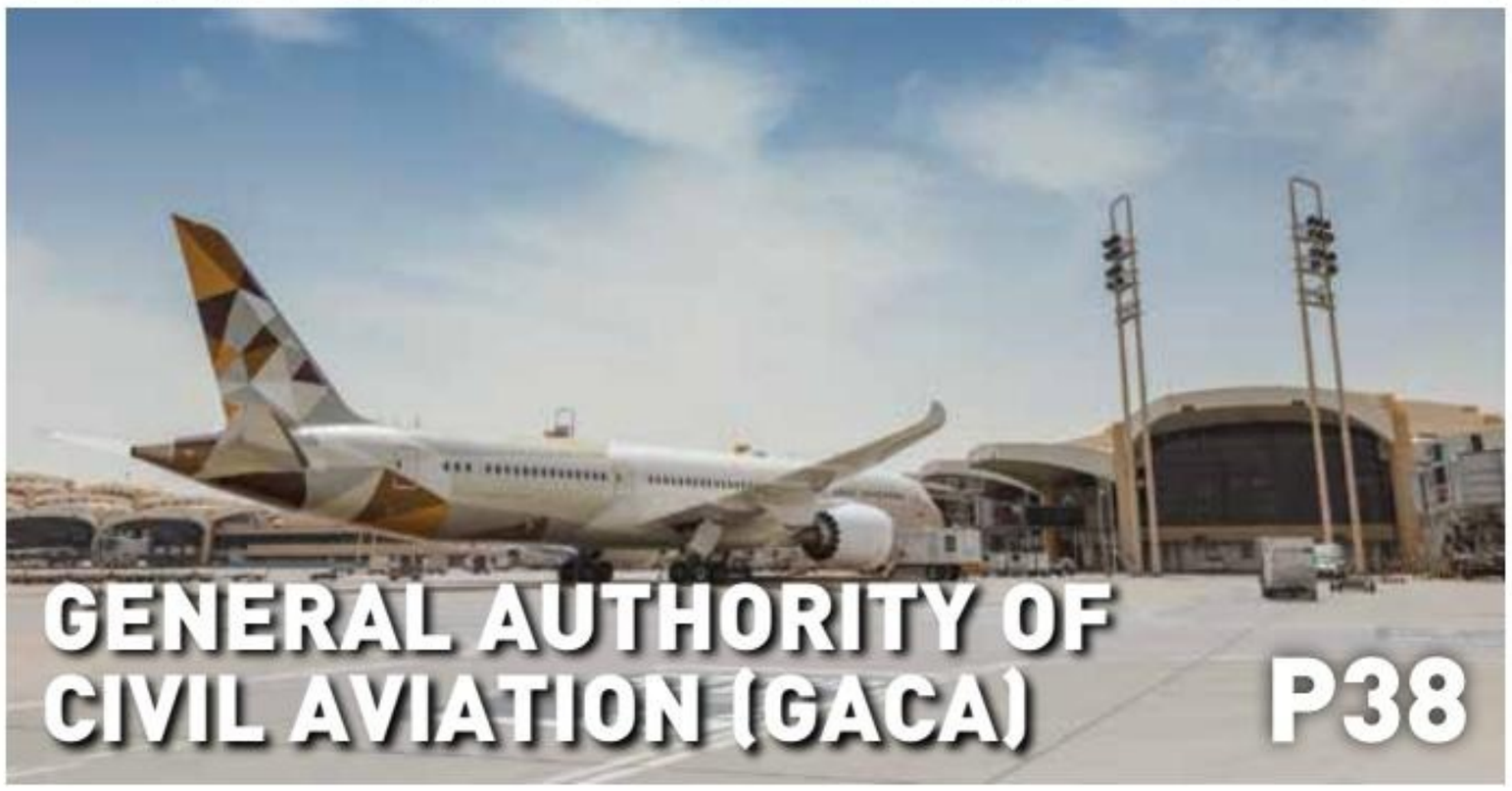

## GENERAL AUTHORITY OF CIVIL AVIATION (GACA) P38

With a strategic plan based on the Kingdom Vision 2013, GACA's vision and objectives for the future revolve around developing the national economy and enhancing transparency, and in doing so contribute to the improvement of services provided to citizens and residents alike, as well as to all of the Kingdom's visitors. GACA has initiated several operational programmes to achieve its strategic objectives across all sectors. One of GACA's most important pillars is the implementation of the vision for the advancement of the civil aviation sector in the Kingdom of Saudi Arabia, where it is responsible for the economic and safety regulations, navigation services and operations of all the nation's 27 airports.

GACA is currently working to implement a number of improvements across airports in Saudi Arabia in order to handle the steadily increasing number of passengers and amount of cargo.

## SHAMAYEL UNITED DEVELOPMENT COMPANY P58

A Jeddah-based real estate developer founded in 2010, Shamayel United Development Company's objective is simple – to take on one of today's great challenges: how to build liveable, sustainable places at a time of rapid metropolitan expansion, developing new possibilities that will shape urban life for generations to come.

## GENERAL ORGNIZATION FOR SOCIAL INSURANCE P64

Al Rimal Community, which introduces a new style of integrated living to Riyadh, is an excellent example of this increasingly popular approach to contemporary life, with around 1200 residential units, as well as retail and leisure amenities, all incorporated into one very stylish neighbourhood.

# USING SOIL IMPROVEMENT METHODOLOGIES FOR FILL COMPACTION

**THE ECONOMIC SITUATION HAS FORCED COMPANIES TO KEEP SEARCHING FOR CHEAP AND FAST ALTERNATIVES FOR ALMOST EVERY ENGINEERING SPECIALISM. WITH THIS IN MIND, TREVI BECAME THE FIRST COMPANY IN SAUDI ARABIA TO BEGIN THE DEPLOYMENT OF A SOIL IMPROVEMENT TECHNIQUE THAT FOCUSES ON DYNAMIC COMPACTION (DC) AND RAPID DYNAMIC COMPACTION (RDC) FOR FILL COMPACTION AS AN ALTERNATIVE SOLUTION TO THE CONVENTIONAL ROLLER COMPACTION METHOD.**

TREVI ASC

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During the last five years, TREVI ASC has successfully completed several million square metres of fill compaction with variable depths between 1 to 10m around Saudi cities and other GCC countries.

The Dynamic Compaction and Rapid Dynamic Compaction alternative is the reason why so many projects have met their schedule and cost targets.

To understand the whole story behind this new market trend, we spoke to with Mr. Hydar Al Shokr, the Country Manager of Trevi Ground Engineering (TREVI ASC) in Saudi Arabia.

**Saudi Projects: Can you give us a little background on Trevi?**

Hydar Al Shokr: Well, Trevi is an Italian group that has been doing business for more than 60 years. Over that time, the Trevi Group has managed to attain a pre-eminent position in the field of foundation engineering worldwide, including the execution of special foundations, tunnel excavation, soil consolidation and the construction of special rigs and equipment to carry out the mentioned works.

Primarily, the group operate five subsidiaries: the original TREVI operation is specialised in the field of underground engineering, which Trevi Ground Engineering company belongs to; SOILMEC, which manufactures plant and rigs that are used for foundation engineering; PETREVEN, which is a drilling contractor and has a solid background in drilling rig engineering; DRILLMEC, which manufactures mechanical and innovative systems, hydraulic rigs for oil, geothermal and water drilling; and finally TREVI ENERGY, which concentrates on developing and executing projects of renewable and conventional sources for the production of electric power.

HYDAR AL SHOKR, COUNTRY MANAGER, TGE, KSA

**Saudi Projects: What are Dynamic Compaction and Rapid Dynamic Compaction? What are the advantages of these techniques?**

Hydar Al Shokr: Dynamic Compaction (DC) is an old technique used to increase the density of soil. The process involves dropping a heavy weight (free fall) repeatedly on the ground at regularly spaced intervals. The weight used depends on the degree of compaction desired and ranges from 8 to 36 tonnes. The height varies up to 30m, while Rapid Dynamic Compaction (RDC) is an excavator base connected to a hammer with a weight ranging between 7 to 16 tonnes, the hammer dropping from a controlled height onto a patented foot. Energy is transferred to the ground safely and efficiently as the RDC foot remains in contact with the ground, and this technique can be used for shallow treatment.

The production for a Dynamic Compaction machine can reach up to 70,000m² per month, while a Rapid Dynamic Compaction machine can achieve up to 200,000m², dependent upon the required depth of improvement, soil type and other factors.

**Saudi Projects: What is the secret behind this quick spread of fill compaction using the Dynamic method?**

Hydar Al Shokr: It's no secret. Dynamic Compaction works with natural soil on a wide range of fill material, providing contractors with flexibility in the selection of suitable fill, which makes the construction of fill platform much faster, in addition to the simplicity of the execution, as it requires only crane and pounder without any added material or labour. These are definitely the main two reasons behind the quick spread of this methodology in the region, which has a big difference in terms of time and cost when we compare it with the traditional method. Actually, the RDC was developed originally for British Military use, targeting the quick repair of damaged aircraft runways.

From our side, we did lots of trials in Saudi Arabia and other GCC countries, in coordination with several well organised companies, consultants and geotechnical offices, to prove the effectiveness of the methodology in achieving different projects' foundation design criteria. For example, we have recently completed a trial under the supervision of Saudi Aramco at Jazan Economic City, and have since received inquires specifying these techniques by name.

To make the comparison easier, when we talk about a big difference in time, consider that we finished a project of a 2 million m² area and six million m3 of fill in only 4 months, without water or electricity using cheap granular material with a flexible specification.

**Saudi Projects: The whole construction market is facing difficulties these days. Do you think it is the right time to try new technologies?**

Hydar Al Shokr: Someone once said "Inside every problem lies an opportunity," and we at Trevi strongly believe in this. That's why our innovative R&D department work continuously on developing new ideas and approaches, and performing physical trials. Although such efforts are costly, it opens for us a lot of work as explained before. From another point of view, it is important for us as a company to utilise our experience in this field in order to better serve our clients and market needs. This is what makes us different and a pioneer in our field.

**Saudi Projects: Does this mean that you are going to start something new in the field of ground engineering?**

Hydar Al Shokr: Definitely, Trevi has just finished a successful trial for a new technique which we believe will add value in the field around the world, and we will be interested to talk about it in the not too distant future.