



Engineering Structures for Life



BUILDINGS - INDUSTRY & SCIENCE

King Abdulaziz City for Science and Technology (KACST)

ABOUT

GEG has developed several projects in Saudi Arabia some of which are located in Riyadh.

GEG was deeply involved in King Abdulaziz City for Science and Technology (KACST) project in collaboration with the reputed and innovative German architecture office LAVA.

KACST masterplan establish a vision of the state-of-the-art for a research and innovation campus in Saudi Arabia. Cutting-edge research was carried out to define a modular framework for the campus layout resulting in an exercise of great optimisation of solutions and a common system of research laboratories and technical support buildings allowing maximum flexibility of the use of space.

In the first stage of this ambitious project, GEG developed the infrastructure design for the entire complex and for 9 buildings that include 6 research institutes of different specialties.

- Nuclear Science Research Institute
- National Centre for Satellite Technology
- Joint centres of Excellence Program
- Petrochemical Research Institute
- National Centre for Nanotechnology
- National Centre for non-Destructive Testing
- Wadi Car Park
- Headquarter Car Park
- District cooling plant

The infrastructure design includes a district cooling plant with a power capacity of 81 MW. There is also a centralisation of water reserves and the entire complex is served by a network of technical tunnels.

FACTS

Year: 2015-2016

Client: Lava

Services: Detailed design, Structural Engineering, Foundations design, Ground support and earth retaining structures, Mechanical, Electrical and Plumbing design, Telecommunications & Security, Project Management, Value Engineering, Building Information Modeling (BIM)

TEAM

Paulo Pimenta

Hugo Marques

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LOCATION

Riyadh, Saudi Arabia

Research buildings are complex and heavily conditioned by the need to meet the laboratories demanding requirements. This condition is further aggravated by the particular nature of some facilities involving explosion resistance, radiation, electromagnetic interference, clean rooms, etc.

Based on GEG's extensive experience, these challenges were resolved and presented innovative and excellence engineering solutions that resulted in a reference project.

GEG's approach to this project was based on BIM technology. On the one hand, the need for remote collaboration and the exchange of a large amount of information was possible through the use of some tools such as *Autodesk Revit* which was used in all engineering disciplines. On the other hand, the need for thoroughness and compatibility only would be possible using this technology, which also enables the fulfilment of very tight delivery schedules. The geometric complexity of some solutions was also solved with an additional tool such as *Tekla*, which allowed solving architectural challenges.

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