Established by royal decree, Bee’ah was founded in Sharjah in the UAE, to provide integrated environmental and waste management services to meet the growing energy challenges of communities across the Middle East and North Africa. The new Bee’ah headquarters needed to embody their ethos and vision of a sustainable future by example.

Zaha Hadid Architects created the designs for the iconic headquarters building which seemingly rises out of the desert sands, mirroring the shapes of the dunes that form the arid landscape. Integral to the design was the importance of incorporating as many ecologically efficient and sustainable solutions as feasible into the materials, building process and long term maintenance of the property. Once complete, the new Bee’ah Headquarters will stand as an iconic example of what design innovation and a determined commitment to sustainability can achieve.

Zaha Hadid Architects design some of the most iconic, avant-garde buildings in the world.

Their architectural visions are known for testing the boundaries, heightening the relationships between inner spaces and the environments in which they are set, as well challenge our ideas as to how we live, work and interact within defined space.

Executing such creative and innovative visions takes an extraordinary level of engineering expertise and experience. BuroHappold Engineering has successfully partnered with Zaha Hadid Architects for many years on numerous projects around the globe. The main challenge of the Bee’ah Headquarters project was resolving the complex 3D geometry into an optimally build-able and cost effective structure.

The initial design concept included plans to utilise moulded concrete sections to build headquarters walls. However it was determined that the best solution was to rationalise the design by using lines of steel frames of standard section size and a GRC roof, instead of freeform concrete units.
The switch from concrete to steel for the majority of the building meant the integrity of the design could be maintained, we could reduce material consumption and yet deliver a more cost-effective solution. However in order to clad the highly curved and dynamic surface of the building we needed to create over 4000 unique GRC panels. Every finished piece weighs approximately 100kg. Assembly will require extraordinarily careful, calculated and coordinated effort.

We believe durability lies at the core of responsible sustainable architecture. We insisted the cladding be constructed of lightweight GRC instead of the traditionally cheaper aluminium. The objective was to decrease the cooling loads through a ‘cool roof’ that remains cooler in the sun by minimising solar absorption and maximising thermal emittance. Cool roofs require high Solar Reflectivity Index (SRI). In places like Sharjah where sandstorms occur, materials like white coated aluminium which usually provides high SRIs are not robust enough for the lifespan of the building, so GRC proved to be the best solution.

The final objective in the project is to create the first zero energy building in the Middle East, and in so doing garner a LEED Platinum Certification. To accomplish this all power required for the building will be generated from low and zero carbon sources, including the converted municipal waste from the adjacent Bee’ah Waste Management Centre and solar energy captured by large arrays of photovoltaic cells, which are incorporated within the site’s landscaping.

The new Zaha Hadid Architects designed Bee’ah Headquarters embodies a deep, multi-faceted commitment to environmental sustainability. Our own commitment, in partnership with Bee’ah and Zaha Hadid Architects, to strive for a LEED Platinum Certification on the project, drove a creative opportunity to secure the best practices in environmental sustainability at every step of the project and ultimately challenge how we build more sustainable structures around the globe.