

Visit to Galaxy Entertainment Group:

# A Beacon of Sustainability in the Entertainment Industry

The Asian Institute of Intelligent Buildings (AIIB) recently organized a visit for its members to the Galaxy Entertainment Group (GEG) integrated resort facilities in Macau. This visit not only provided insights into GEG's impressive infrastructure and advanced management systems but also highlighted the extensive application of modern engineering technologies in promoting intelligent development and environmental sustainability within large-scale entertainment venues. This experience has sparked significant reflection on the future of engineering development.

## Galaxy Macau: Where Technology and Sustainability Converge

GEG's integrated resort in Macau is more than just a symbol of luxury and entertainment. It stands as a testament to the seamless integration of cutting-edge engineering and an unwavering commitment to sustainable development.

## Architectural Brilliance: A Symphony of Technology and Art

Upon entering the Galaxy Macau's Crystal Lobby, visitors are greeted by the breathtaking Crystal Lotus. This awe-inspiring spectacle features 380,000 meticulously cut crystals, illuminated by 146,000 individually programmed lights, all working in harmony with a dynamic ceiling to create a mesmerizing symphony of technology and art. This Crystal Lotus is not just a visual masterpiece but also a testament to the pinnacle of engineering design and technological application.

The Galaxy International Convention Center (GICC) and Galaxy Arena, part of GEG's Phase 3C expansion project, further exemplify the integration of modern architectural and engineering prowess. The Galaxy Arena, with its flexibility and multi-functionality, caters to a wide array of events. The Galaxy Auditorium, on the other hand, prioritizes conference functionality and user comfort. The innovative use of PTFE roofing showcases the adoption of advanced building materials in modern construction. These projects serve as valuable case studies for our members.



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## A Green Giant: Championing Sustainable Development

Throughout the visit, we witnessed GEG's commitment to environmental sustainability, a commitment that permeates every aspect of the resort's operations. From architectural design to facility management, GEG strives for excellence in sustainability. The integration of energy-efficient technologies, such as adjustable louvers, double-glazed windows, high-efficiency fan coil units, and low-intensity LED lighting, minimizes energy consumption. The implementation of a Smart IoT Office System further enhances energy efficiency by enabling intelligent management of lighting, HVAC, and indoor air quality.

GEG's operational philosophy places a strong emphasis on the responsible use of water resources. The installation of water-saving fixtures, including low-flow showerheads, faucets, and dual-flush toilets, alongside the exploration of condensate water recovery and reuse technologies, demonstrates GEG's commitment to water conservation and circular economy principles.

Furthermore, GEG has invested significantly in creating a sprawling 55,000 square meter green landscape, providing a breath of fresh air within the urban environment and showcasing their dedication to harmonious coexistence with nature.



## Engineering Marvel: Unveiling the Central Chiller Plant

The visit provided an in-depth look at GEG's central chiller plant, an engineering marvel in its own right. This facility, one of the largest of its kind in Macau, employs a multi-stage construction approach and incorporates high-efficiency chillers from world-leading brands like York, Trane, and Carrier. With a total cooling capacity exceeding 20,600 refrigeration tons, the plant's capacity can be further expanded to accommodate future development. The implementation of a combined cooling and heating system underscores GEG's commitment to energy efficiency and resource optimization.

## Unsung Heroes: The Facility Management Team

GEG's facility management team plays a crucial role in ensuring the smooth and efficient operation of the resort. They not only guarantee the seamless functioning of all facilities but also continuously optimize systems to enhance energy efficiency and minimize waste. The sophisticated multi-filtration and purification systems employed in the swimming pools and water features, coupled with the integration of advanced technologies like building automation systems and energy management systems, exemplify the professionalism and meticulousness of GEG's facility management practices.

## Conclusion: Sustain the Low Carbon

GEG's success story demonstrates that large-scale integrated resorts can achieve green and low-carbon operations through technological innovation and scientific management, setting a positive example for the entire tourism and hospitality sector. GEG's experience teaches us that economic development and environmental protection are not mutually exclusive; rather, technological innovation and green development can go hand in hand, paving the way for a more sustainable and prosperous future.

