





BEYOND THE BLUEPRINTS: UNVEILING MEP WITH **3D ANIMATION & VR**

Enter the exciting world of 3D animation and Virtual Reality (VR). By leveraging these powerful technologies, we can now showcase MEP systems in an entirely new way, offering clearer communication, enhanced collaboration, and a deeper understanding for everyone involved in the construction process.

- Mr. Ahmed Serria

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Health Surveillance at KAFD project

One Million Safe Manhours at our KAFD Project

New Site Offices at AMAALA

In Memory of Eng. Ashraf Elsaey

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For decades, static plans and technical drawings have been the cornerstone of presenting Mechanical, Electrical, and Plumbing (MEP) systems. While these documents remain essential, they often leave stakeholders struggling to grasp the complex details and spatial relationships that define these vital building components. Enter the exciting world of 3D animation and Virtual Reality (VR). By leveraging these powerful technologies, we can now showcase MEP systems in an entirely new way, offering clearer communication, enhanced collaboration, and a deeper understanding for everyone involved in the construction process.

TECHNOLOGIES:

3D Modeling

3D modeling enables stakeholders to visualize the entire project without having to imagine components from Computer-Aided Designs (CADs) and plans. The project is rendered as if it is already completed, providing a comprehensive view of what is to come.

Animation

Beyond static 3D models, animation enhances the pre-visualization process by illustrating the timeline progress of each stage in the project. The collaboration between software such as Revit, 3ds Max, and game engines results in stunning and accurate simulations.

VR

Virtual Reality has evolved significantly, becoming essential in many fields. Using VR in infrastructure projects allows stakeholders to walk through the project from a human perspective or a bird's-eye view. This immersive experience helps absorb the magnitude of the location and view it from different angles. Additionally, VR enables the application of different options with a simple click.

AHMED SERRIA

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WORKFLOW:

First Stage: Design

- The project design is completed in Revit within the Building Information Modeling (BIM) department.
- · Upon completion, the project design is exported to a 3D platform such as 3ds Max to begin the second stage.

Second Stage: Refinement and Animation

- The Revit project is imported into 3ds Max for refinement and enhancement of the object models if needed.
- Textures and materials of objects are "baked" in three-dimensional coordinates to distinguish between materials such as metals, PVC, glass, and walls, giving a realistic look and finish.
- The scene is animated to show how project phases will progress, from site setup and logistics to workflow
- The entire project is animated piece by piece, reflecting the actual timeline progress.

Third Stage: Real-Time Rendering

- The animation is exported to a gaming platform like Unreal Engine to work on lighting, environment, applying textures and materials, and real-time rendering.
- Multiple options for certain aspects or parts of the project may require repeating previous steps for each option, then combining these
 options into different levels.
- Coding and programming are used to set up control tools for First Person View (FPV), allowing walkthroughs of the site, interaction with
 project elements, timeline navigation, and displaying or hiding multiple options.
- · On-screen elements and final touches are added, such as timeline and cost progress.

Final Stage: Export

- The final output is exported to a native format usable on most platforms.
- The output can be a video ready for playback or a small software package with on-screen controls requiring minimal hardware to operate.
- The project can also be exported as a VR experience via special VR software, adding a realistic feel to the project's magnitude.

BENEFITS:

For Clients

- · A very accurate, clear, and realistic preview of the project before actual construction, allowing for detail refinements.
- · Clear time schedules of building stages and progress.
- · Estimated costs can be visualized along with the timeline progress.

For Contractors

- · A future look at the project helps in better organizing steps such as logistics, storage, and traffic.
- · Early detection and resolution of mistakes and issues, saving time, money, and effort.

For Third Parties

- · Analysis of surrounding locations to ensure environmental preservation and minimal disturbance to neighbors.
- · Identification of suitable passages, tracks, and entry/exit points to maintain smooth traffic flow.
- · Easier acquisition of governmental clearances for the site.

Integrating 3D animation and VR into the presentation of MEP systems transforms how these essential building components are communicated and understood. By adopting these technologies, we are paving the way for more effective and efficient project execution, benefiting clients, contractors, and third parties alike.

These adjustments focus on clarity and readability, ensuring that the message is conveyed effectively to your newsletter audience.



MONTHLY SPECIAL









Our team at KAFD project recently participated in a health medical surveillance program aimed at preventing illness and injury. This initiative focuses on monitoring the health of our workforce and assessing exposure to workplace hazards. Ensuring a safe and healthy environment is our top priority.









EXCITING ACHIEVEMENT: ONE MILLION SAFE MANHOURS

AT OUR KAFD PROJECT



We are proud to announce that our team at KAFD project has been awarded an HSE Recognition Award by PMCM JLL for achieving ONE million safe manhours. This remarkable accomplishment reflects our unwavering commitment to safety and excellence on site.



NEW SITE OFFICES AT AMAALA



()) ILL SEE A BRIGHTER WAY

ONE Million Safe Manhours HSE Recognition Award

FIRST FIX





Proud to showcase some photos from our new site offices at Amaala project. A huge thank you to our Regional Projects Director, Eng. Essam Mohammad, for his exceptional support and for ensuring our offices a great representation of our company!

🖾 FIRST FIX NEWS

In Memory of Eng. Ashraf Elsaey

It is with deep sadness that we announce the passing of our valued colleague, Engineer Ashraf Elsaey, who tragically lost his life in a car accident in Riyadh, Saudi Arabia.

Eng. Ashraf joined our team in June 2018, bringing with him a wealth of knowledge and a tireless work ethic; his dedication and expertise propelled him to become a construction manager. His journey with us was marked by numerous achievements and an unwavering commitment to excellence.

Ashraf was not just a colleague but a mentor and friend to many. His positive attitude, problem-solving skills, and leadership qualities made a significant impact on all who worked with him.

We invite you to read the heartfelt words from his direct manager, Eng. Basel Draki, and colleagues who had the privilege of working closely with him throughout the years.

Ashrafs memory will forever remain in our hearts, and his contributions to our company will not be forgotten. We extend our deepest condolences to his family and loved ones during this difficult time.

Eng. Basel Draki, Project Director - ADF Project.

Losing suddenly any person in life is very difficult, especially when you have a strong and honest relationship with them. I worked with Engineer Ashraf for seven years on the same project, facing together all the stress, pressure and happiness of succeeding each phase of the project. He was very calm, smart, and a problem solver. We will miss his kindness, charity, sincerity and smile. We will remember him and pray to God to give his family enough strength to accept his loss and continue his successful path.

d Shafi Alungal

I met Engineer Ashraf in 2018, and we began to work together. Sadly, we lost him so early. His absence will be deeply felt by all who knew him. Engineer Ashraf was more than just a colleague, he was a mentor, a friend, and a shining example of excellence. His contributions to our organization were remarkable, and his impact will continue to inspire us. His memory will live on in our hearts and minds, and I will always remember the moments we shared.

Makesh Boomenathan, Qa/Qc Manager

I will always remember Engineer Ashraf's dedication to mentoring young professionals. He organized a good team and was always available for advice. His passion for sharing knowledge and helping others grow was one of his most admirable qualities. He leaves behind a legacy of empowered and inspired engineers.



DISCOVER MAGNA A LUXURY LIFESTYLE COASTAL DESTINATION

An undiscovered coastal jewel on the Gulf of Aqaba near the Red Sea, Magna will be a place like nothing on earth. A perfect synthesis of majestic nature, extraordinary experiences and architectural ingenuity – offering luxury living and tourism. All within a nature reserve, where 95% of the land is reserved for wildlife.

Magna's 12 destinations are located along a 100-kilometer stretch of Saudi Arabia's pristine Culf of Aqaba shoreline. These will set a new global standard in luxury sustainable tourism. As part of Saudi Vision 2030, Magna will focus on advanced technology, world-class architecture and ultra-modern amenities – all harmonized with nature to offer a unique experience for residents and guests. It will prioritize the conservation and rejuvenation of native flora, fauna and the owe-inspiring natural landscape. The development will feature 15 luxury hotels, 1600 rooms, suites, apartments and more than 2500 premium residence.



EVENTS





City Walk is back in Jeddah!

City Walk returns for the fourth consecutive year, solidifying its status as one of the premier locations in Jeddah Season. It offers an ideal entertainment destination for families, distinguished by its variety of experiences. With multiple sub-zones, it features a rich collection of games and activities for all visitors, as well as retail shops and restaurants catering to all tastes.

Starting from: 28 JUNE - 17 AUGUST 2024





Taking place at Boulevard City in Riyadh, the Esports World Cup will be home to the largest esports and gaming festival in the world. Throughout the 8 weeks, the tournaments will be surrounded by entertaining venues full of gaming and esports activations. Meet and greet your biggest esport stars, your favorite content creators and get closer to the publishers of your favorite games, and immerse yourself in a fun and entertaining experience while you enjoy the action of the tournaments.

Dates: 03 July - 24 August



تیـــم لاب بـلا حــدود teamLab★Borderless

Visit teamLab Borderless Jeddah, a world of artworks without boundaries, a museum without a map created by art collected teamLab. Immerse yourself in borderless art. Wander, explore with intention, discover, and create a new world with others.

Location: Jeddah Historic District





Airports are increasingly adopting smart technology to enhance the travel experience, streamline operations, and ensure passenger safety. Here are some of the cutting-edge smart technology services making waves in airports around the world, with a focus on IP (Internet Protocol) intelligence solutions that facilitate these advancements:

Biometric Screening and Passport Control

Facial Recognition: Facial recognition technology expedites the check-in and boarding process. Passengers can pass through security and board flights with a simple face scan, reducing the need for physical documents and minimizing wait times.

Fingerprint and Iris Scanning: These biometric identifiers are used for secure and swift immigration and customs clearance, supported by IP-enabled biometric databases that ensure quick data access and verification.

Automated Check-In and Baggage Drop

Self-Service Kiosks: Self-service kiosks allow passengers to check in, choose seats, and print boarding passes without needing assistance from airport staff. Many of these kiosks are connected via IP networks for real-time data processing and updates.

Automated Baggage Drop: These systems enable travelers to tag and drop off their luggage independently, speeding up the baggage handling process and reducing queues.



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Smart Security Systems

Al-Powered Screening: Artificial Intelligence is employed in security screening to detect prohibited items more efficiently. Al systems can analyze X-ray images faster and more accurately that human operators, with data transmitted over secure IP networks.

Body Scanners: Advanced body scanners enhance security checks while ensuring passenger comfort and privacy, with IP integration allowing for real-time data transmission and analysis.

Mobile Apps and Digital Assistance

Airport Apps: Dedicated airport apps provide real-time updates on flight status, gate changes, and baggage claim information. They can also offer directions within the airport and highlight amenities and services. These apps rely on IP technology to deliver accurate and timely information.

Virtual Assistants and Chatbots: Virtual assistants and chatbots answer passenger queries 24/7, providing information on flights, services, and airport facilities.

Internet of Things (IoT) and Smart Infrastructure

Smart Luggage Tracking: IoT-enabled luggage tags allow passengers to track their bags in real time via their smartphones, reducing stress of lost of delayed luggage.

Intelligent Lighting and HVAC Systems: IoT-connected systems optimize energy use based on real-time data, improving comfort and reducing the airport's carbon footprint. These systems communicate over IP networks for efficient management.

Enhanced Passenger Experience

Personalized Services: Using data analytics, airports can offer personalized services to passengers, such as tailored retail and dining suggestions, enhancing the overall travel experience. IP solutions help in collecting and analyzing passenger date securely.

Augmented Reality (AR) Navigation: AR apps help passengers navigate through large and complex airport terminals, providing step-by-step directions to gates, lounges, and other facilities. These apps utilize IP-based location services to guide travelers accurately.

Efficient Traffic and Resource Management

Smart Parking: Automated parking systems guide drivers to available spots, offer booking options via apps, and support cashless payments, making the parking experience seamless.

Resource Optimization: Smart Systems optimize the allocation of airport resources like gates, check-in counters, and staff, improving operational efficiency and minimizing delays. These systems rely on IP infrastructure for real-time communication and coordination.

Health and Safety Enhancements

Contactless Services: Airports have implemented contactless services, including touchless check-in, payment systems, and health screening kiosks. IP technology enables these services by facilitating secure and fast data transactions.

UV-C Sanitization: UV-C light technology is used for sanitizing high-touch areas and luggage, ensuring a safer environment for travelers.

IP Intelligence Solutions

Predictive Maintenance: IP-enabled sensors and analytics predict equipment failures before they happen, ensuring timely maintenance and reducing downtime.

Passenger Flow Management: By analyzing data from cameras, Wi-Fi networks, and sensors, IP intelligence solutions help manage passenger flow, reducing congestion and improving the overall experience.

Enhanced Security Analytics: IP surveillance systems equipped with advanced analytics can identify suspicious behavior and potential security threats in real-time. These systems provide airports with the capability to respond quickly and effectively to incidents.

Incorporating these smart technologies not only enhances passenger convenience and satisfaction but also boosts operational efficiency and security at airports. As the aviation industry continues to evolve, we can expect even more innovative solutions to further transform the travel experience.