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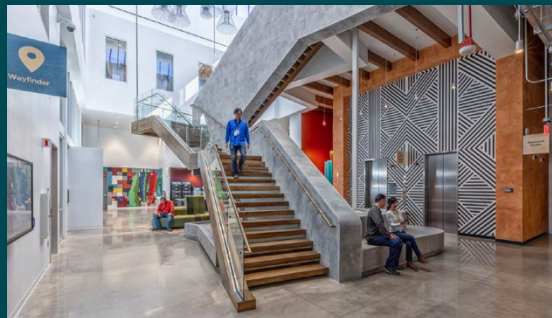
State of the Data Center Market

AN UPDATE FOR *BUILDING DESIGN + CONSTRUCTION*

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PERSPECTIVES ✏️

Introduction

Building Design + Construction Managing Editor Quinn Purcell requested Fortis Construction's insights on the overall state of the data center market sector. On the following pages, you will find the *BD+C* questions with Fortis' Data Center Business Unit Leaders responses.

What is the Overall State of the Market Today— Growing, Shrinking, Staying the Same?

The data center market is growing, and it is growing fast due to continuous demand for additional capacity and speed. The state of this market is one where **general contractors must evolve at an equally rapid pace— persistently improving the speed with which facilities are built while also lowering the cost-per-megawatt delivered**. The clients in the market are demanding a partner that can deliver on these schedule and cost requirements without sacrificing safety or quality, so we are continuously raising the bar internally for everything from preconstruction, prefabrication, and site safety, to VDC, commissioning, and QAQC.

How has AI Meaningfully Impacted the Data Center Sector in the Past 12 Months?

Artificial intelligence and machine learning have **taken clients' 5- or 10-year plans and brought them in—sometimes dramatically—in order to meet increased data center demand**. With both new facilities and retrofits, building to meet clients' AI needs requires additional speed, precision, quality controls, methods of procedure, and enhanced commissioning processes, among other GC necessities.

What is the Single Biggest Trend Your Firm has Seen in the Data Center Sector this Year?

In the last year, we have seen broader adoption of **Target-Value Design** and the need to be more creative in finding **opportunities to continually decrease construction durations**. At Fortis, we appreciate the opportunity to apply our preconstruction expertise earlier in the process where we have the greatest opportunity to optimize and align on design, constructability, procurement, and schedule.

What is the single biggest innovation your firm developed/ implemented on a data center project in 2023/2024 (e.g., design solution, construction method, new technology, data analytics, etc.)?

The single biggest innovation developed by Fortis Construction on a data center project in the last year is the way in which **we have evolved virtual reality to save (literally) millions of dollars**. Recently for a **complex data center project in Singapore**, we significantly **enhanced the efficiency of design reviews by incorporating VR**; by utilizing Resolve software and Meta Quest VR headsets, Fortis was able to prevent an estimated $3 million in rework costs within a span of three months.

The Singapore data center project posed unique challenges due to land scarcity, leading to a vertical design that required innovative solutions for the congested MEPF services. Traditional design review methods often resulted in overlooked issues, but **VR technology enabled the team to virtually inspect the design, identify non-clash issues, and provide feedback that would typically be delayed until site walkthroughs**. The adoption of VR was initially met with skepticism, but Fortis use of the Resolve modeling engine facilitated the processing of complex models on wireless headsets—streamlining the review process and gaining buy-in from various stakeholders.

The VR reviews allowed for the identification of more than 1,000 potential issues, many of which could have been missed using conventional methods. This proactive approach saved time, money, and helped avoid delays associated with rework. The use of VR also proved **beneficial for reviewing DfMA components**, ensuring their design and installation requirements were met before reaching the construction site.

Fortis' success with VR has led to integration with the standard BIM process where collaborators use Quest headsets for design reviews. The BIM Execution Plan outlines the role of VR in the model review process, ensuring an organized and impactful adoption. By combining user-friendly software like Resolve, accessible hardware, and a well-defined process, **Fortis is pioneering the use of VR in construction, demonstrating its potential to the industry**.
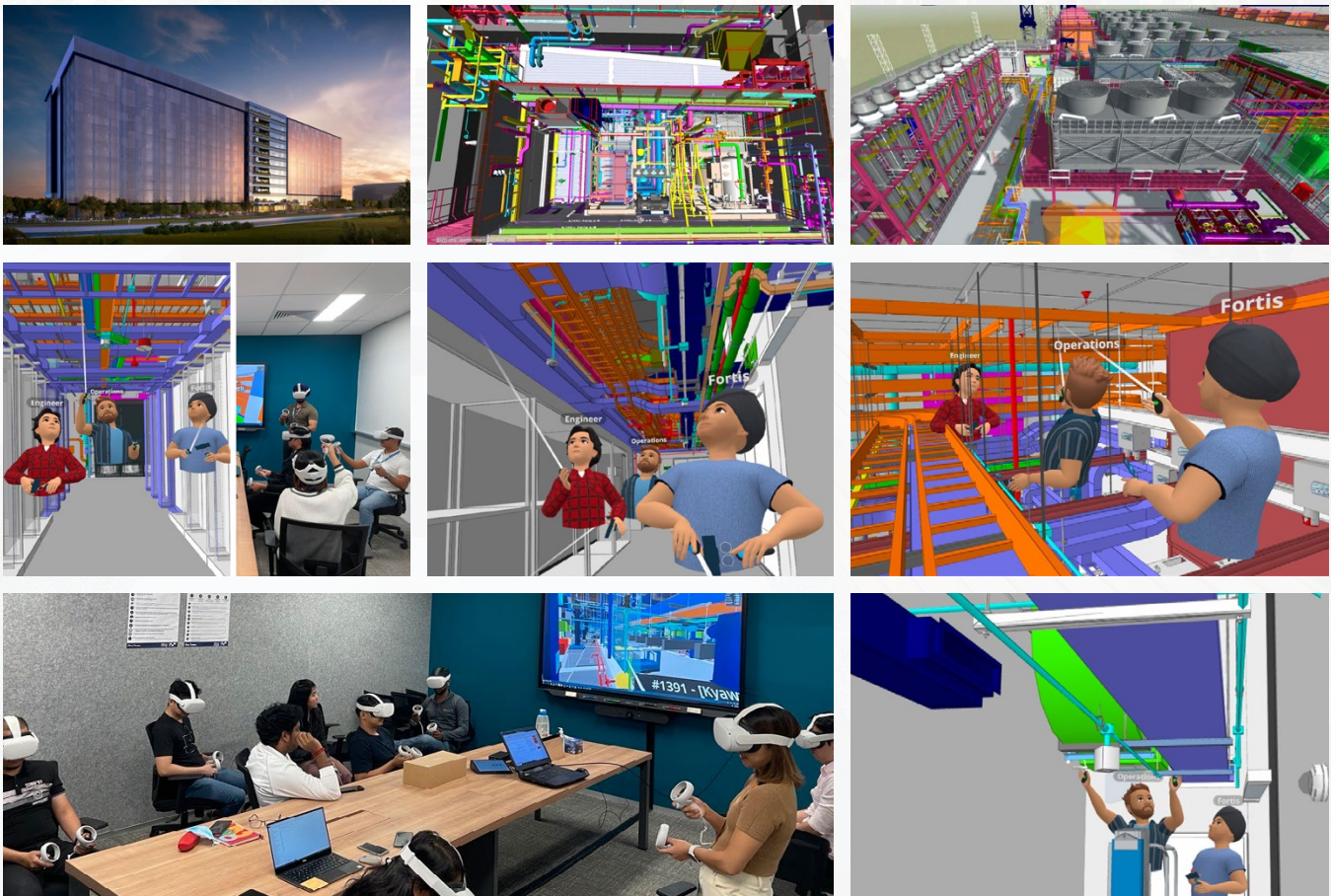
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