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Data Centers: Three Real Estate and Construction Challenges

Building a Data Center Is Hard. Make Sure You Have the Right Team.

Authors: Matthew C. Olsen

At a Glance

- Land use approvals require proactive engagement with government officials, community outreach and general education well in advance of any zoning or other applications being filed. Preparation is critical because projects can live or die at this very early stage.

- Data centers have very specialized and unique equipment. To avoid project delays and other issues, contractors and laborers should be experienced and familiar with the type of structure to be built and the equipment needed for operations. Proper planning and organization are a must to avoid or mitigate supply chain issues from which many projects — data centers included — suffer

- Design deficiencies and construction defects can arise at multiple stages of data center projects. They can happen with respect to the building shell, but they can also happen during the fit-out of individual data halls. Defects can cause major consequences, so make sure your contract protects your interests.

Data centers are a case study in demand outpacing supply. The backbone of our economy — and the daily lives of virtually everyone — depends on technology and innovation. And innovation is happening faster than ever with AI taking center stage. The scene has been set and we're watching the story unfold as technology companies and entrepreneurial developers try to outpace their competition and construct the IT infrastructure needed to support

rapid growth.

Rapid growth is exciting. But it brings risks and challenges, especially in the data center world we're living in. New data center projects are announced almost daily around the country. Missing from the headlines are the stories about all the data center projects that were announced and later discarded, those that were constructed but unable to operate with the efficiency and effectiveness demanded, and those that were unable to obtain the government approvals or power required.

There are countless reasons why a data center project can fail. This article is limited to just three construction and real estate challenges that we see the most, and they concern: (1) land use approvals; (2) project delays and supply chain issues; and (3) design deficiencies and construction defects.

I. Land Use Approvals

Data centers require lots of land, and that land can be hard to find. Often, the most desirable land won't work because there is insufficient power or fiber available. Finding the right parcels is hard enough. Obtaining the zoning and development approvals needed for construction on that land may be much harder. Why? Because many communities don't want data centers, and zoning boards comprised of community members may be unwilling — absent subsequent court challenges — to approve the zoning and development applications submitted. Communities routinely organize to remonstrate against data center projects, citing fears and concerns over excessive energy consumption, community health and welfare, and alleged changes to scenery and neighborhood life.

Proactive engagement with government officials, community outreach, and general education are required well before any applications for land use approvals are even submitted. And once the applications are submitted, it is imperative to hire experienced and sophisticated counsel to create a comprehensive record of materials and testimony for the local boards to review and hear in proceedings similar to a trial (albeit less formal). Projects often live or die with a zoning approval or denial. It's critical to get this stage right, especially with the sums many technology and data center companies are investing in these projects.

II. Delays and Supply Chain Issues

After land use approvals are hopefully obtained, and after energy contracts are determined, the page turns to a construction project. Like any construction project, there are risks of delays and supply chain issues. Delays can arise from any number of things, although the usual suspects concern labor and the supply chain.

Data centers are not your ordinary commercial or industrial building. While they may look like a giant distribution warehouse, they are far from it. The mechanical and electrical systems for these facilities can be incredibly complex, not to mention that data halls may require raised floors, large (and extremely hot) ceiling plenums, liquid cooling systems, numerous air handling units, and countless feet of cabling. A lot can go wrong. Contractors and laborers must be experienced with data centers and all the systems and equipment required. The level of experience needed can be hard to find. Plus, even the most experienced contractors may be unable to solve the inevitable supply chain issues that may be encountered, especially given the amount of equipment and systems needed. Proper planning and meticulous organization are a must.

III. Design Deficiencies and Construction Defects

So much can go wrong with data center projects on the front end. Problems can also arise after the data centers are constructed and operating. Like any construction project, design and construction defects can emerge months or years after initial completion — though data centers are uniquely susceptible to defects.

Consider a data center constructed as a colocation facility, where there are several data halls within each data center. Each hall may be unique to the company occupying it, meaning each hall may be designed and "fit out" differently. So even if the data center shell was constructed properly, a company occupying an individual hall may encounter its own design and construction defects with things like containment systems, air flow, electrical issues and inefficient server rack layouts. A seemingly small design or construction defect can have a massive impact on that colocating company. The company's servers may overheat or fail, its business may be unable to function as it should, growth may be stalled, and the company may be stuck trying to find supplemental capacity elsewhere.

In Conclusion

There is a race to build data centers. And nobody wins a race without preparation or a great team behind it. Make sure that team includes trusted advocates to support your project and help you avoid or navigate the countless obstacles ahead.

For More Information

For further information, you may contact the author.

MEET THE AUTHORS

Matthew C. Olsen

Partner

+1 317 237 1219
Indianapolis

matthew.olsen@faegredrinker.com

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