



## Data Centers Begin to Compute as CRE

BY MIKE HOBAN

**B**OSTON — At a recent conference on data center trends, its keynote speaker summed up a major difference of what was important in facilities being built



Ara Krafian



Andrew Oldeman

at the turn of the 21st century versus current trends: “Back in the 1990’s, we were having a race to reliability; now, we’re having a race to efficiency,” the speaker joked, but designers and engineers involved in the dynamic industry are quick to agree with his point.

Gary Murphy, a principal at Integrated Design Group who attended the conference, concurs. “The biggest change in data centers is that the focus was previously all about reliability, and today reliability is a given,” he says. “So the focus (today) is on



University of Massachusetts Medical Center data information facility, Shrewsbury MA

energy efficiency. The new technologies and the new design trends are to make your data center much more efficient.”

Ara Krafian, president and CEO of Cambridge architecture and engineering firm Symmes Maini & McKee Associates

(SMMA), says that profound technological advances in energy efficiency systems specific to data centers have increased greatly in the last five years, keeping pace with rapidly rising data demand. “This is continued on page 16

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not like an office building, where you can get a little cheap on the mechanical systems,” explains Krafian. “In an office building you can get an efficiency system that would take 12 years to pay for itself. But in a data center, you’re going to pay for that efficiency up front and it can pay for itself in months—literally.”

SMMA has designed large data centers for Blue Cross/Blue Shield in Providence, RI, and on behalf of the University of Massachusetts Medical School in Shrewsbury. Outside New England, the firm was engaged on a massive 450,000-sf data center and development lab in North Carolina’s Research Triangle. Many of the bigger data centers are being constructed in regions where the tremendous amount of energy required is cheap (i.e., Iowa, North Carolina, the Pacific Northwest and Texas),



Greg Zais

but local companies or institutions which prefer or require data centers to be nearby, are putting the emphasis on making the centers as energy efficient as possible. And with the emphasis of end users in Greater Boston on green initiatives—particularly in the youth-driven tech sector—data centers need to deliver redundant and reliable critical power, cooling and network services in ways that reduce their carbon footprint.



200 Quannapowitt Pkwy., Wakefield MA

One such SMMA engineering design project emphasizing that issue was undertaken on behalf of software company Dassault Systemes, which officially opened its new North American headquarters at a ribbon cutting ceremony in Waltham yesterday (see related story inside). “Originally, Dassault was a 5,000-sf data center and a 5,000-sf (software) lab, but then it got squeezed into a smaller footprint with higher density,” relays Andrew K. Oldeman, a LEED-certified professional at SMMA. “It turned out to be 2,500-sf of data center and 2,500-sf of lab, while increasing from 100 watts per sf to 150 watts per sf.”

How efficiently a data center uses its power is measured in PUE (Power Usage Effectiveness); the ratio of how much of the power is actually used by the computing equipment versus cooling and other over-

head in the facility. “The trend is to get that PUE number down as close to one as you can,” says Murphy. “A good corporate data center is 1.4-1.6, and the real cutting edge guys are 1.2-1.3, the Yahoos and Microsofts.”

Another trend that Murphy sees gaining momentum is modular construction. “There’s a drive to make as many of the systems as modular as possible. Even if you’re in a traditional data center, you’re probably (upgrading) in increments. What you do is put in what you need for today, but then you have a plan for growth,” he outlines. The Integrated Design Group is currently working on two projects for Digital Realty Trust, which owns in excess of one million sf of data center space in the Bay State. One property is a new facility in Needham, and another is repositioning of the former Converse building (200 Quannapowitt Parkway) in Wakefield to a 55,000-sf state-of-the-art facility.

Greg Zais of Jones Lang LaSalle is a tenant representative exclusively for data centers presently representing Digital

Realty. Zais remembers the 1999 to 2000 years well, when dot-com companies were building customized data centers for their own use, a fever pitch of activity that disappeared for years once the bubble burst in 2001. “There’s a major difference between 2000 and 2012,” Zais stipulates. “In the previous era, data centers weren’t being designed for third-party use, and investors and lenders aren’t letting data center providers go berserk.”

Zais says that data centers are becoming an accepted real estate type, and in the event of another economic crash—because of the incremental nature of the current construction trends—“people wouldn’t be left with 100,000 to 150,000 sf of data center” inventory. The fundamentals for data centers right now are strong, Zais and others report. JLL is currently tracking 52,000 sf of available space—with 70,000 sf of demand. “The product type—third party data centers—are about eight years old,” says Zais, adding, “It’s a brand new product type, and is gaining wide acceptance.” ■