

# Brocade: Tier II Data Center Upgrade

## Design-Assist

### Tenant Improvements in an Occupied Facility



#### Brocade: Tier II Data Center Upgrade

4 Brocade Parkway  
Broomfield, CO 80021

**Size:** 4,000 SF

#### Construction:

Start: December 2008  
Completed: July 2009

#### Contract Price:

Initial: \$1,731,991  
Change Orders: \$226,557  
Final: \$1,958,548

#### Delivery Method:

Design-Assist

#### Reference:

Brocade  
Efrain Garcia  
408-333-7712  
Efrain.garcia@broadcom.com

#### Design Team:

Burkett Design  
Peter Carlson – Architect  
303-595-4500

RMH Group  
Phil Kocher, RMH Group –  
Mechanical  
Eric Bunce, RMH Group - Electrical  
303-239-0909

#### Key Staff:

Scott Solem, Project Manager  
Matt Sigward, Superintendent

#### Project Description

The project objective was to integrate an additional 2MW, diesel generator; new transfer switches, a new 300KVA, upgrade and service an existing 225KVA UPS. Within a 4000 sqft, operational data center, upgrade the existing wet system fire sprinkler system into a dry-pipe, pre-action sprinkler system and add a new clean agent fire suppression system. Add a redundant B side power source for the server racks within the DC. All new systems to be incorporated into the exist EPO system.

#### Project Challenges

The existing DC was a mission critical element to Brocade's business. It needed to remain operational during the entirety of all preparatory work. This required the installation of extensive protection and scaffolding will allowing all equipment to function without compromise to either power or thermal conditions.

Other complicating factors were the generators, transfer switches, and main power distribution for the building were all located at the opposite end of the building. This meant very large conduit had to be routed above other occupied areas. Equipment screening and sound control was required for the new generator installation. Close coordination with the utility was required to assure they would be on site at during the shutdown to simulate a utility failure. This simulation was required to insure all testing and testing sequences were proved out and deemed reliable.

#### Cost Control Strategies

Beyond the selection of Sun (CM/GC) the balance of the work was competitively bid, despite there being 5 distinct phases to the drawing package. While there were changes due to the fast track nature and the complexity, those changes were accommodated within our GMP with the exception of the items specifically indicated.



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### **Design Strategies**

Sun Construction worked very closely with the owner's team and its design team. They allowed all stakeholders to freely collaborate and embrace the challenges of the project. There were integration, fitment, and technical challenges. Our approach utilizing a war room strategy, allowed for easy access to various expertise needed to successfully implement the project.

