



BOB MOORE CONSTRUCTION

# **Mouser Electronics:**

## **Delivering a Successful Construction Project at a Location With Extensive Ongoing Client Operations**

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White Paper  
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## **Delivering a Successful Construction Project at a Location With Extensive Ongoing Client Operations**

### **Summary**

The Mouser Electronics Expansion project in Mansfield, Texas presented a unique challenge: The 231,800 SF project was built in close proximity to several hundred Mouser employees and several million dollars worth of sensitive inventory and equipment in the warehouse and administrative departments. This required us to employ creative techniques and expanded safety protocols to ensure that Mouser employees were able to conduct their business safely and without interruption, and to avoid interference to power, water and Internet/Telephone systems.

This paper describes how we addressed the challenge of conducting an extensive construction project in close proximity to ongoing business operations and employees to deliver an award-winning project.



## **Delivering a Successful Construction Project at a Location With Extensive Ongoing Client Operations**

Mouser Electronics is the fastest growing electronics distributor in North America. A sign of the company's aggressive focus on customer service, the company's online store now offers more than 550,000 products. Because of Mouser's fast growth and expanding product selection, the company needed to more than double the size of its existing facility.

The 231,800 SF expansion features 48,500 SF for office, call center and data center space. It includes two floors with a structural first floor with crawlspace, in a new building with a shared wall with the old office space. The new 3,400 SF data center features access flooring and a pre-action fire suppression system.

A 3,000 SF two-story rotunda provides a dramatic new main entrance to the office area. The rotunda is a totally radiused, curtain-wall structure. It is internally drained, with 22 roof and overflow drains.

The addition featured a new 180,000 SF warehouse, more than doubling the existing warehouse facilities. The new and old warehouses are connected with 24' x 18' tie-ins to integrate the facilities. A mezzanine area provides additional space for administrative functions. The warehouse also includes two satellite office cores for warehouse management and administrative personnel.

As part of the expansion project we recreated the FM 157 and Highway 287 business interchange. For this aspect of the project we widened the interchange, asphalt-overlaid FM 157 and redirected Highway 287.

### **The Challenge**

Mouser continued their operations in the existing office and warehouse space throughout the project. It was crucial that construction did not interfere, even momentarily, with Mouser's ongoing operations. Mouser calculated that an interruption like a downed power or phone system would result in a real dollar loss of more than \$1 million per hour. At that rate, a one-day interruption would have cost more than the price of the entire expansion project.

Besides the proximity to operational power and phone systems, the fact that the company continued operations during the project meant that we were working very close to Mouser's employees as they performed their work. In some instances we were forced to do work directly around, below and above employees, automated warehouse systems and millions of dollars worth of sensitive electronics products inventory.



This became particularly challenging when we needed to reroute the existing facility's storm and sanitary lines. The existing main storm system and overflow was inadequate to the facility's needs; we converted the main system into the overflow and expanded and redirected the overflow into the new system we built as part of the building addition. A portion of this process took place in the same warehouse area where Mouser employees worked eight hours per day, maintaining inventory and filling orders (see picture to the right).

For the office space we were able to do this via the crawlspace beneath the floor. We did not have this luxury in the warehouse. During construction we needed to run temporary lines through the old warehouse without interfering with more than a dozen fully automated storage racks and an inventory handling system.

To accomplish this we retained a third-party scaffolding consultant to design a joist-supported scaffolding system. With this system we were able to temporarily suspend the storm and sanitary systems from the ceiling joists above the automated racks, which permitted construction work to continue while allowing the client's employees to work safely and without interruption. Ultimately, by using this system we were able to reroute the sanitary system and the primary and overflow storm system in the existing facility with zero hours of lost productivity to the client.



Employees operating in the existing office space forced us to change our approach as well. The original plan was to tie the new addition to the existing wall with a bolt on truss system that would serve as support framing for the first and second floors and roof of the new office. This would have required many small penetrations through the existing wall and forced us destroy the finishes on the existing wall's interior. This work would have generated substantial noise for some time in the existing office, keeping the call center and sales group from being able to do their work on the phones.

Instead of the bolt on truss system, we used a tube and pocket design. In this approach we cut two openings at each floor level, brought columns against the wall, slid tubes through the pockets and welded them to the columns. By using the tube and pocket design we were able to create a quality floor support system at the tie-in, and the portions of the task that would have interfered with Mouser operations were completed over a single weekend – without interrupting the client's employees.



We also erected a temporary dust and sound wall inside the existing office's north wall when connecting the new and existing office spaces. With the sound, dust and debris effectively blocked, we were able to remove portions of their existing walls and pour our floors directly up to theirs for a seamless connection while Mouser employees continued on with their work.



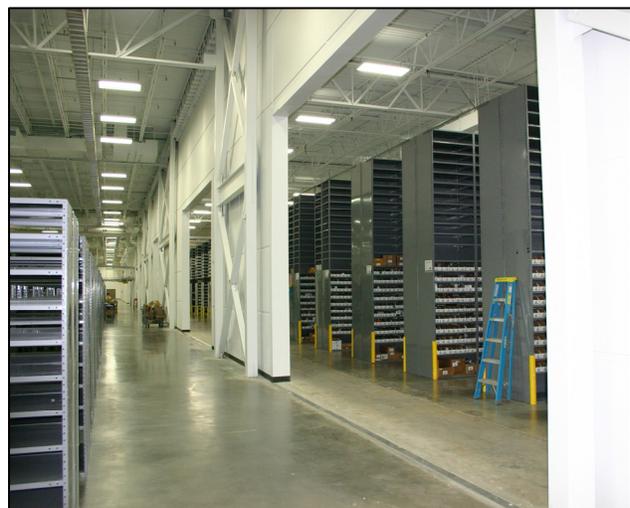
The challenge of working in such close proximity to the company's operations required us to adjust our processes throughout the project.

Many of our tasks, such as completing tie-ins for MEP systems (fire, HVAC, fire alarm and all low voltage systems) had to be accomplished after hours and on weekends. Groundwork and excavation work was also affected by this requirement. Any time we attempted an excavation we hand dug and potholed to confirm location of lines before excavation began. By the end of the project we dug up the power lines and encased them in concrete to provide some protection to the client in the future.

## Safety Concerns

As stated previously, construction took place in close proximity to Mouser employees who were carrying on normal company operations. This drove several adjustments to our normal construction processes but it also created a potential safety hazard. Administrative personnel are not trained in the risks of working near demolition or construction, nor are they equipped with safety gear like hard hats or steel-toed boots. We were forced to pay close attention to places where Mouser work and construction work interacted.

Nowhere was this situation more obviously a potential danger than at the tie-ins between the existing and new warehouses (pictured right). To create the tie-ins we cut six 24' x 18' holes in the existing wall. These cuts took place directly next to high





traffic pathways for warehouse vehicles and employees; these employees had no experience dealing with the dangers associated with concrete demolition and removal. To ensure everyone's safety we created temporary dust walls and flagged off additional areas in the existing warehouse and briefed our subcontractors' workers to watch for Mouser employees who may try to circumvent our safety barriers. The safety measures worked and we experienced no incidents or close calls during the process.

## **End Results**

Through the use of creative construction techniques we were able to deliver this project with no lost time to Mouser's operations and no injuries to their employees or our subcontractors. The client's initial plan was for us to do the shell, and they would bid out the finish-out. Based on the relationship we established and their experience with us performing the shell construction, the client chose to negotiate the finish-out with us rather than bid it out. They have since retained us to do additional finish-out work in the existing building under a separate contract.

Bob Moore Construction received the 2007 Outstanding Construction Award from Texas Building Branch-Associated General Contractors of America (AGC) for the Mouser Electronics project. The company was selected as the top submission for Texas in the category of Industrial / Warehouse Over \$5 Million. The project was nominated for this award after winning the Summit Award from QUOIN, the north and east Texas chapter of AGC, earlier that year.

# Mouser Electronics

**Location:**

Mansfield, Texas

**Size:**

231,800 SF

**Owner / Developer:**

Mouser Electronics

**Role:**

General Contractor

**Building Type:**

Office / Call Center / Warehouse



## About This Project:

- New two-floor office building with a shared wall to the existing space with a new 3,400 SF data center.
- Two-story rotunda is a totally radiused, curtain-wall structure. It is internally drained, with 22 roof and overflow drains. Two radiused staircases with rolled steel and aircraft cable hand-rails surround the open reception area. Exterior topped with Alucabond pre-finished metal panels with structural steel outrigger supports.
- 180,000 SF warehouse is 100% lit and climate conditioned; the interior is 100% finished with impact resistant sheetrock and painted ceilings.
- As part of the expansion project we recreated the FM 157 and Highway 287 business interchange.
- Received the Outstanding Construction Award, a statewide competition sponsored by the Texas Building Branch AGC. Also a recipient of the Summit Award for Construction Excellence from QUOIN / AGC.

