Modular Zone Wiring

CITICORP CAMPUS POWERS UP WITH PRE-FABRICATED MODULAR ZONE WIRING FROM AFC/UNI-FAB

"Fast-track" doesn't begin to describe the construction pace of the new 800,000 square foot Citicorp customer service campus built on 100 acres in Tampa, Florida's Sabal Park. In just 14 months, contractors completed a state-of-the-art office campus, including four office buildings, an amenities center, a daycare center, two parking garages and other structures. Thanks to a pre-fabricated modular zone wiring solution from AFC Cable System's Uni-Fab division, electrical contractor Electric Machinery Enterprises (EME) easily met its completion deadlines and saved up to 75 percent on labor costs.

"It would be almost impossible to complete a project like this in 14 months without some type of edge or advantage," explains Ron Kiepke, senior project manager for Tampa-based EME. According to EME, the electrical contract for the entire Citicorp campus was approximately $20 million. "The pre-fabricated Uni-Fab modular zone power system saved us huge amounts of time. Everything comes pre-cut, pre-measured, fully assembled, and pre-tested. In a tight labor market like this, and with an extremely aggressive construction schedule, pre-fabricated wiring is definitely the way to go," says Kiepke.

Thousands of Assemblies

AFC's Uni-Fab division in Dallas, Texas, designed, manufactured, and delivered thousands of pre-fabricated power assemblies to the Citicorp project between November 1997 and April 1998. The assemblies included:

- 618 master distribution boxes (MDBs), each equipped with six power ports and a total of over 41,000 feet of pre-attached flexible metal-clad home run cable.
- 3,200 access floor modules (AFMs), each equipped with two duplex grounded power outlets, one UPS (uninterruptible power supply) outlet, and telecommunication ports for telephone and computer networking.
- 5,500 extender cable assemblies, which included modular quick-connect plugs installed on both ends to allow fast and secure connections between the MDB and AFM. The extender cables were ordered by Citicorp in 5, 10, and 20 foot lengths for a total of 52,500 feet of MC cable.

□ 175 Flex2 modular lighting whips with quick-plug connectors pre-installed on both ends. The whips were ordered in a variety of lengths ranging from 5 to 30 feet for a total of 2,500 feet of flexible armored cable. The whips were used to power fluorescent lights in a 130,000 square foot amenities center on the Citicorp campus.

□ 44 custom-machined copper grounding bars measuring 1 / 4" x 4" x 12" and 5 grounding bars measuring 1 / 2" x 12" x 36". These bars were used to ground the main power panels used throughout the campus.

According to Mark Richmond, head of AFC / Uni-Fab's engineering group, Citicorp's representatives worked closely with AFC / Uni-Fab design engineers in designing the circuit layout for the vast campus. "Citicorp engineers provided us with the specific lengths they needed for home run cables," Richmond explains. "They also specified which MDBs would service which floor areas, and so on. We provided detailed shop drawings showing how we planned to build the assemblies."

Speeds Adds, Moves and Changes

To provide flexibility in configuring office layouts to suit varied and changing space usage, Citicorp planners specified a raised floor and modular zone power distribution. The pre-connectorized access floor module assemblies produced by AFC / Uni-Fab are designed to be easily moved to accommodate office additions, moves, and other changes.

"Citicorp can place floor modules anywhere they need them," Kiepke explains. "The owner loves them! Maintenance workers can move a workstation by themselves with minimal disruption to operations. It saves the owner a lot of time and money on adds, moves and changes."

Most companies today report that an average of 30 percent or more of their

The access floor module assemblies are designed to be easily moved.

offices and staff are moved each year. AFC / Uni-Fab's modular zone power distribution system allows safe, easy changes to floor layouts. Removable floor panels allow a company's electrical maintenance staff to unplug floor modules and move them to new areas.

While AFC / Uni-Fab did not provide telecommunications cabling for the Citicorp project, the access floor modules provide telephone and computer network ports under a separate access hatch in the face plate. A telecommunications subcontractor installed Category 5 copper network cable within the buildings and to each access floor module. Fiber optic cable was used to provide a network link between buildings.

Master Distribution Boxes

Each AFC / Uni-Fab master distribution box used in the Citicorp project measured 22" x 12" x 3.25" and came pre-wired with a pre-measured metal-clad home run cable and six power ports. MDBs can be ordered with up to 6 power ports. Each port includes a quick-connect head used to connect to extender cables.

The metal-clad extender cables were used to connect the MDBs to the access floor modules. Each AFM includes a short pigtail extension with a connector head that plugs into the extender cable from the MDB.

"The MDBs each come in a box with the home run cable on a spool," Kiepke notes. "We set the MDB in place and unroll the home run cable back to the power panel. We install the access floor modules out on the floor, then connect the modules to the MDBs with extender cables. There's no hardwiring, except at the main power panel where we land the home run cable."

According to Richmond, the AFC / Uni-Fab modular zone distribution system was used in the four main office buildings on the Citicorp campus. Each building was three stories high. "On a huge fast-track project like the Citicorp office campus, prefabricated modular power systems not only help keep the contractor on schedule, but it reduces errors and allows the contractor to do more with a smaller crew. The labor savings over traditional hardwire techniques is tremendous."

"We've done several projects using AFC / Uni-Fab pre-fabricated assemblies," Kiepke notes. "The Uni-Fab engineering staff in Dallas is very knowledgeable. They know construction and they know the manufacturing process. It makes it easy for us to order from them. We provide Uni-Fab with the contract drawings, we get back a circuit design with shop drawings that tell us where everything goes."

"The drawings include numbers, which correspond to the numbered cables," Kiepke continues. "We just pull the assemblies out of the boxes and lay them under the raised floor. We saved about 75 percent on labor over doing a project like this with hard conduit and pulling wire. Labor is typically about 40 percent of total project cost. Not only does the AFC / Uni-Fab system save the contractor time and money, it benefits the building owner by providing flexibility and ease of use."