

Brickell City Centre Transforms Miami



Inside

Family Values Helps N.C. Firm Weather the Storm...8



Heavy Machines Inc. Opens New Branch...12



Bobcat Produces One Millionth Loader...16

Table of Cont	tents	.4
Backhoes & A Section	Attachments 49-6	51
Paving Section	on65-7	76
Auction Section	ion86-9)7
Business Cale	endar8	88
Advertisers I	ndex9	8



By Cindy Riley CEG CORRESPONDENT

Located in the heart of Miami, Fla.'s financial district, Brickell City Centre is transforming the downtown area, as work continues on the \$1.05 billion mixed-use project. Developed by Hong Kong-based Swire Properties, Brickell City Centre is currently the largest single project in the city.

Described as a symbol of urban sophistication, the massive project will be built in two phases. Americaribe and John Moriarty & Associates of Florida (AMJV) were awarded oversight of vertical construction, operating as a joint venture and responsible for completing phase I.

"AMJV started on the east block in June 2013 with columns on the hotel structure, starting construction up from the pressure slab under the scope of Turner Construction," said Project Executive Louis Brais.

Currently, crews are working on the structural steel belt truss at the hotel level 20, slab assembly and welding. Structural steel assembly and metal decking are being installed on the east podium. The concrete core of the office structure is going up at one level per week. Completion of the parking basement levels is in progress.

Believed to be the largest project currently in progress in the Southeast, Brickell City Centre is a major source of pride for those associated with the mega development.

"It will be a landmark for future reference," Brais said. "There are special items such as Climate Ribbon, bridges across South Miami Avenue and underground parking."

The environmentally innovative Climate Ribbon, scheduled to take place in August, will provide active and positive climate control and will be installed during the night shift, due to the aggressive schedule and other activities requiring the tower cranes. In addition, demolition **see BRICKELL page 44**

Located in the heart of Miami, Fla.'s financial district, Brickell City Centre is transforming the downtown area, as work continues on the \$1.05 billion mixed-use project

Employment Increases, Declines in Select States

Construction firms added jobs in 38 states and the District of Columbia over the past 12 months, but they reduced headcount in 27 states between May and June, according to an analysis July 18 of Labor Department data by the Associated General Contractors of America. Association officials said the employment gains help, but that construction employment remains below peak levels

"The overall trend in construction employment remains favorable, with three-fourths of states adding jobs on a year-over-year basis."

> Ken Simonson Associated General Contractors of America

in every location except North Dakota.

"The overall trend in construction employment remains favorable, with threefourths of states adding jobs on a year-overyear basis," said Ken Simonson, the association's chief economist. "But the recovery remains choppy, not steady. In June, monthly gains occurred in fewer than half the see EMPLOYMENT page 36

Work Continues on \$1.05B Brickell City Centre in Miami



Daniel Azoulay photo Developed by Hong Kong-based Swire Properties, Brickell City Centre is currently the largest single project in Miami.



Malcolm Drilling was responsible for the installation of a deep soil mix (DSM) plug and perimeter sheet pile system, which created a hydrostatic barrier beneath and around the planned excavation for construction of two levels of underground park-

BRICKELL from page 1

and new extensions to the 8th Street Metromover station are scheduled for the project. Curtain wall installation for the office building and the five levels of podium must be performed.

A total of 11 tower cranes of varying models and sizes are being used on the project, for vertical lifting of material and equipment. Equipment on site ranges from temporary buck hoists to concrete boom pumps.

The main challenges have involved site logistics and the downtown location. An aggressive schedule to finalize design as production is ongoing has kept crews focused at all times. Construction began in July 2012, with phase I expected to be completed by the end of 2015. Phase II should be open by 2018.

The project involves 9.1 acres along South Miami Avenue between Eighth Street and Sixth Street, with 5.4 million sq. ft. (500,000 sq m) of office, residential, hotel, retail and entertainment space, in addition to a two-level underground parking garage that spans seven acres below the property. In addition to a shopping center, hotel and apartments, there will be 128,580 sq. ft. (11,954.5 sq m) of Class A offices, a 131,651 sq. ft. (12,230 sq m) wellness center, 820 condominiums in two towers and 2,600 parking spaces. Phase II will include the One Brickell City Centre mixed-use tower.

Turner Construction Company was selected to perform parking and foundation work at Brickell City Centre.

"Early in the pre-construction planning and design phase, many different possible solutions were considered by Swire Properties, their team of design professionals and the contracting community to create a hydrostatic barrier beneath and around deep excavation," said Jay Fraser, vice president of Turner Construction. "We were fortunate to have Malcolm Drilling as the prime specialty contractor on our team to play such an important role in the planning and execution of the work.

"Not only was this the first time this specific engineered

solution was utilized to create the hydrostatic barrier, it was applied to an area of three city blocks, or approximately 350,000 square feet. Due to the success of the application on this project and the advantages it will offer to Swire Properties in their completed project, the reapplication of this system on other projects is already occurring."

ing.

Malcolm Drilling was responsible for the installation of a

deep soil mix (DSM) plug and perimeter sheet pile system, which created a hydrostatic barrier beneath and around the planned excavation for construction of two levels of underground parking.

"Malcolm self-performed all DSM work and worked alongside Ebsary Foundations to install the sheet pile syssee BRICKELL page 62



A total of 11 tower cranes of varying models and sizes are being used on the project, for vertical lifting of material and equipment.

Project Ranks Among Largest Current Southeast Jobs

BRICKELL from page 44

tem," said Chris Sammon, project manager. "Mass excavation and utility work was also included in Malcolm's contract, and which was performed by Central Florida Equipment Rentals."

The company began work in July 2012 and completed its assignment in February 2014. The scope of work included foundation excavation, and back fill of the deep soil mixing plug.

"The high groundwater table and porous nature of the bedrock predominant in the region make deep excavations in Miami very challenging," Sammon said. "The goal of the DSM plug and perimeter sheet piling system was to provide a dry excavation for construction of the underground parking.

"The DSM plug was installed from an existing grade of +7 NGVD [National Geodetic Vertical Datum] to a predetermined depth below the bottom of mass excavation level, which was typically elevation of -15 NGVD, with localized excavations extending to -22 NGVD. This was accomplished by utilizing Bauer BG 40 top drive hydraulic rotary drill rigs to install DSM columns to the prescribed depths in an overlapping pattern covering the entire area of the threeblock project. Grout for the DSM was mixed in Obermann grout plants which was pumped to the BG40s."

The perimeter sheet piling system was installed concurrent with the DSM system. Pairs of sheets were set in wet DSM columns, which tied into the larger DSM plug, preventing water from flowing up along the sheet piling during excavation. After the DSM plug was completed in an area, auger cast piles for the structure were installed, also from existing grade, to depths in excess of 105 ft. (32 m). The auger cast piles were installed using a Bauer BG 50, the



The project involves 9.1 acres along South Miami Avenue between Eighth Street and Sixth Street, with 5.4 million sq. ft. (500,000 sq m) of office, residential, hotel, retail and entertainment space, in addition to a two-level underground parking garage that spans seven acres below the property.



Constructionimages.com photo Malcolm self-performed all DSM work and worked alongside Ebsary Foundations to install the sheet pile system, according to Chris Sammon, project manager.

largest top drive hydraulic drill rig in the world, and a smaller Bauer BG 28. After installing the DSM plug, sheet piling system and auger cast piling, the mass excavation was completed with large track-mounted excavators.

Crews also used track-mounted cranes for installation of sheet piling and auger cast reinforcement, and forklifts for moving equipment and parts around the site. To install the DSM plug, approximately 100,000 tons (90,718 t) of bulk cement product was used.

Work also involved the relocation of existing water, sewer and drainage utilities to accommodate the new building footprint.

"Because the project's underground parking included sections below city streets, new utilities and utility bypasses had to be installed to allow some of the existing lines to be taken out of service. Since this utility relocation work was taking place concurrent with the other work related to the underground construction, much coordination was necessary. As the work developed, several changes to the utility system had to be made to match existing conditions. Because of the project schedule and planning between the contractors, subcontractors, consultants and the project owner, many of these changes were made over the course of hours and days, rather than weeks.

"The accelerated schedule of the project, and the need to turn completed sections of the project footprint over to follow-on trades while still working in adjacent sections, presented some real challenges," said Sammon. "The equipment used for the work in Malcolm's contract occupied a very large footprint, while introducing large surcharge loads on the slopes and cuts between these sections which would

Metromover Rail Transports Hundreds of Workers to Job

BRICKELL from page 62

have a 20 foot difference in grade between them. Planning these turnover areas in a fashion that allowed all trades to work as efficiently as possible was a real challenge, but was ultimately successful."

During construction, hundreds of workers are traveling via the 4.4-mi., electrically-powered Metromover light rail station to the job site each day, resulting in fewer vehicles on the road. The heaviest construction activities are being performed during non-peak hours. Traffic lights are being upgraded and installed in the area, while efforts are being made to lessen the impact of noise and dust on the surrounding neighborhood. Steps have reportedly been taken to lessen the environmental impact of construction activities as much as possible.

The project was designed by Arquitectonica, an international architecture, landscape architecture, interior design and urban planning corporation.

"We envisioned Brickell City Centre as the new hub of activity for the urban core of Miami — Miami's version of Rockefeller Center, said Bernardo Fort-Brescia, founding principal of Arquitectonica. "We didn't want to disrupt the urban fabric, so we chose to keep the blocks and their streets in place. Our strategy was to integrate this five million square foot project into the city.

"Instead of a giant box mall, we created five city blocks. Shops face the streets and a newly created pedestrian midblock promenade. The upper levels are connected by bridges with cafes and restaurants. The parking is tucked below grade and connects the blocks under the streets, directing traffic to destinations before clogging the streets."

The design team has created a three-story shopping district linking street life with the elevated mass transit stations that feed into the third level.

"On top of this massive plinth is a park around which towers rise, said Fort-Brescia. "There are three residential towers, two office buildings, a hotel and a mixed use 80-story tower with offices, apartments and a hotel on top. We needed to figure our how to load and unload goods, get people to their destinations, and weave through structure and systems. It's a true jigsaw puzzle, like a Rubik's cube."

The retail promenade is open air, with no air conditioning needed.

"We suspended over it a canopy that we appropriately call a Climate Ribbon," Fort-Brescia said. "It protects from direct sunlight cutting radial heat. It collects rainwater. But most importantly, it's shaped to capture the Caribbean breezes and channel them through the spaces dropping the temperature and humidity dramatically. The fact that we are between two mass transit spaces also helps our sustainability profile. Swire has a history of building at transit hubs like Pacific Place, Cityplaza and Festival Walk in Hong Kong. The project represents long term-vision about a sustainable world.

"We use materials with a long life cycle, such as insulating metal panels and glass for the facades, a unique granite floor called green tea and ceilings made of bamboo planks. There's a combination of industrial and natural materials that bridge the man-made and the natural worlds."

As for the economic impact, the project translates into roughly 1,700 construction jobs on average per year for four years, approximately 3,700 direct jobs and 2,500 indirect jobs after construction completion and more than \$5 million in ad valorem taxes for the city of Miami. It also means more than \$9 million annually in ad valorem taxes from Miami Dade County.

"This project is very significant," said Cheri Kavehersi, business services manager of CareerSource South Florida. "We've partnered with Swire Properties on this project, setting up and customizing a Web site, so that everything is virtual as far as contractors and businesses posting jobs, and job seekers looking for employment.

"The impact is tremendous," Kavehersi said. "It gives opportunity to a number of people in the city over the long haul — not just for a year. Right now the focus is jobs related to the actual construction of the Brickell City Center, but there will be other positions available later on. It's very rewarding to be able to get our citizens back to work, as opposed to employing people coming in from outside the area."

Nothing gives an architect more pleasure than seeing an initial sketch become a building, and then see the public enjoying it, said Fort-Brescia. "This is a very dense neighborhood of offices, hotels and apartments. There's a significant workforce, plus tourists and residents currently with few services, restaurants, shops and no cinemas or other enter-tainment. Brickell City Centre will fill a huge void."

(This story also can be found on *Construction Equipment Guide*'s Web site at www.constructionequipmentguide.com.) *CEG*



The scope of work included foundation excavation, and back fill of the deep soil mixing plug.

Constructionimages.com photo