

Fiber to the Unit: Deer Ridge Apartments, Jamestown, N.D.

This month, **BROADBAND COMMUNITIES** showcases Deer Ridge Apartments in Jamestown, N.D. This new apartment complex is one of the first fiber-to-the-unit deployments in the Upper Midwest – but others are sure to follow soon. Thanks to Rod Wolters of Dakota Central Telecom, Tom Warren of Clearfield and Steven Paul of IRET Properties for their help in gathering the information for this profile.

By Masha Zager / *Broadband Communities*

Jamestown (aka “The Buffalo City”) is a thriving city in North Dakota with a diverse economic base – the kind of place people want to move to. IRET Properties, a midwestern real estate investment trust, had already built rental properties there, but rental vacancy rates were still below 2 percent. As Steven Paul, IRET’s regional manager, says, “This showed the need for quality housing in that market,” so IRET decided to build another multifamily property.

Deer Ridge Apartments, which opened in fall 2015 with 163 units in three buildings, is now the largest apartment community in Jamestown. It’s targeted to a broad range of middle- to upper-income residents – anyone from University of Jamestown students to empty nesters – and offers such amenities as a heated underground garage, a game room and a fitness center. “The entire project is the amenities,” Paul says. “That’s what has differentiated us.”

Once the plans for Deer Ridge Apartments got underway, the opportunity for a new type of amenity presented itself. Jamestown is a CLEC community for Dakota Central Telecom (DCT), a telephone



cooperative based in Carrington, N.D., about 40 miles from Jamestown. Over the last few years, DCT has been upgrading all its facilities, both in its home territory and its CLEC territory, and it is now 100 percent fiber-based.

Because DCT’s service area is mostly rural, multiple-dwelling-unit (MDU) buildings are relatively rare. DCT does serve another Jamestown MDU with fiber, but that building has copper cabling from the comm room to the individual apartments. As Deer Ridge was new construction, DCT saw it as a great opportunity to try out some new fiber-to-the-home technology that it hadn’t had a chance to use before. IRET saw a great new amenity for its residents – an amenity that no other service provider in Jamestown was offering.



Architectural rendering of Deer Ridge Apartments

And the residents? After some initial puzzlement about where to plug in their computers, “they’re excited about it,” Paul says.

VITAL STATISTICS

Property Description: Deer Ridge Apartments consists of three three-story buildings in a U-shaped configuration, connected by corner units on the ground floor. The community area features a fitness center, a full kitchen, a pizza oven, an indoor grill, a pool table and shuffleboard; unit amenities include stainless appliances, central air and heating, and washer/dryers. There is an underground parking garage beneath the entire structure.

Demographics: Middle- to upper-income, all ages

Greenfield or retrofit? Greenfield

Number of units: 163

Style: Mid-rise

Time to deploy: About seven months during the construction period, most of it waiting for other trades.

Date services started being delivered: September 1 (first building) to October 15, 2015 (final building)

Special requirements: The underground parking garage needed a connection to two garage door openers.

SERVICES

Services offered or planned on the network: High-speed Internet access with a top speed of 200 Mbps (higher speeds can be provisioned if needed); video; voice; common-area wireless; fiber-connected controllers for two garage door openers.

Provider choice: Residents have the option of using satellite TV with individual antennas.

Deer Ridge Apartments is all about the amenities – and fiber to the unit allows for superior technology amenities, including 200 Mbps Internet speeds.

PROPERTY OF THE MONTH HIGHLIGHTS

~ Deer Ridge Apartments, Jamestown, N.D. ~

- One of the only fiber-to-the-unit deployments in the Upper Midwest
- New apartment community in a growing market
- Triple play plus managed Wi-Fi services
- Equipment vendors include Clearfield, Calix and Amino

BUSINESS

Which parts of the network are owned by the service provider, and which parts are owned by the property owner? The property owner owns everything in the building beyond the demarcation point.

How do the service provider and owner market the services?

Steven Paul, IRET Properties: Fiber hasn't been the No. 1 thing we're pushing in our marketing, but it is once we get prospective tenants to the property.

Rod Wolters, Central Office Technician, DCT: In our quarterly newsletter, we did a business spotlight on Deer Ridge. I helped [IRET] get technical materials together to explain to residents the benefits and reasons for FTTH. The 100 Mbps and 200 Mbps tiers are going over very well, but TV is getting to be a harder sell; we're getting to the point where people are mostly looking at broadband speeds. We charge \$3.95 per month for managed Wi-Fi, and we market it by saying, "There's no reason for you to purchase a router every two years; let us manage it for you and keep it upgraded when we do software upgrades." We operate a 24/7 help desk, so if a connection issue arises, customers can call in, and the help desk will help them. Most people are going completely wireless, except for a wired connection to the DVR.

What is the take rate for services?

Rod Wolters: All the tenants take some services. Some take triple play; others take data only or TV and

data. About 75 to 80 percent are taking managed Wi-Fi services.

Network benefits:

Steven Paul: It's too soon to tell, but we expect it to have some value.

TECHNOLOGY

Broadband architecture: Fiber to the unit

Where are ONTs placed? Inside each unit

Technology used: GPON

Methods for running cables inside

buildings: Indoor riser-rated microduct and a 3mm pushable/pullable fiber spliced at each ONT and on the main floor near a splitter wall box

Vendors/products: Calix supplied the FTTH electronics, including the new 844G GigaCenter indoor ONT, which allows managed Wi-Fi

services with both 2.4 GHz and 5 GHz Wi-Fi channels. Clearfield supplied the microduct, pushable fiber and other connectivity equipment. Set-top boxes are from Amino, and the IPTV platform is from Innovative Systems.

Rod Wolters: Using Wi-Fi in an MDU will work, but it requires planning. We were a Calix test site for managed Wi-Fi. Two of their staff came out to help us; we fired up one building with 57 ONTs, did predictive analysis and set up the system to their requirements. Then we did Wi-Fi mapping and speed tests to see if there was overlap between apartments. We tweaked the platform about four times. If everyone is using the 5 GHz spectrum, there are no issues. The more you can keep off the 2.4 GHz spectrum, the better off you are. Each apartment has a specific 5 GHz channel, and with the right power level settings you can get good coverage in the apartment and not too much bleed-over into other apartments. Most smartphones will move over automatically to 5 GHz, but for now, a lot of other devices are still on 2.4 GHz. But we're running pretty clean, the data throughputs are fine, and no one is complaining.



Clearfield FieldSmart fiber entrance cabinet (top) loaded with fiber splice trays and FieldSmart Wallbox with 1x32 splitters (bottom)



Fiber-fed structured wire deployment (Calix ONT on top, Ethernet distribution patch panel below it and power supply at the bottom)

The tools that Calix has in place to manage Wi-Fi let our customer service reps help customers over the phone and save on truck rolls. I'd like to work with building owners to do more of this in the future.

For the microduct inside the building, the distributor Border States Electric got me in touch with Clearfield. They were willing to help set up the network, and they had all the materials: the right boxes, the microduct, the pushable fiber, the enclosures, the patch panel, optical splitters, media centers for the electronics, everything we needed in one stop. The electricians had bid on pulling cable from the comm room to the apartments, so Tom Warren from Clearfield came out and went through the proper installation procedures with them. The electricians were a little hesitant at first, but after they pulled the duct, they were done – there was no coax and no Cat 5 to worry about – so they liked it. They said, "We wish we could do this all the time." Then we pulled the fiber through the duct, and it pulled through beautifully.

The beauty of microduct is that you always have a repairable path for the fiber. If it weren't available, we would have pulled two Cat 5 cables and coax to each apartment. Those wires could easily get nicked [by other trades during construction], and you don't find out because it's behind the Sheetrock.

Tom Warren, Applications Engineer, Clearfield: Instead of using a large conduit inside the building, such as metal or plastic pipe, which is hard to bend, DCT decided to use indoor riser-rated microduct, which is 10 mm on the outside. It's about the size of coaxial cable, so it's easy for electricians to install at the same time as other products. They use the same attachment methods as they would for coax.

The advantage of microduct is that if, for some reason, the fiber were to become damaged, they could pull or push a new piece of fiber into it. This repairable pathway is much smaller and easier to install

than conventional products. It also gives them an upgradable pathway if they need more fibers in the future. They wouldn't have to open up the walls. Rod put in a single fiber, but the microduct can take up to 24 bundled fibers.

The inside of the microduct is very smooth, and fiber is very slippery, so it's easy to install, even with a 6-inch bend radius.

LESSONS LEARNED

What was the biggest challenge?

Steven Paul: The main challenge is informing the residents and educating them about what fiber to the apartment means. We're having to learn that, too.

What was the biggest success?

Rod Wolters: The ease of installation of fiber through microduct.

What feedback does the leasing office get from residents?

Steven Paul: Residents are initially puzzled when they see only a Cat 5 jack and no telephone or coax jack. We have to explain how to get set up. Once they know about the fiber connection, they're excited about it.

What should other owners consider before they get started on a similar deployment?

Rod Wolters: Get a list of service providers, give them a call, and ask, "What can you do for me? What can you offer?" It pays to shop around and to do research on the community.

Steven Paul: Educate yourselves and your customers. Have all the information on hand about what benefits FTTH will provide, and put it into the marketing package. ❖

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