

Secrets to Success

The Country's Premier Fiber-Optic Amenity Company Shares All

By Caitlin Clinard ■ *Connexion Technologies*

Connexion Technologies, headquartered in North Carolina, is taking the real estate industry by storm. In just five short years, this fiber-optic innovator has become a national leader in Fiber to the Home (FTTH) deployment, second only to Verizon. How does this privately held company compete and *excel* in this cutting-edge industry? The true secret lies in Connexion's willingness to exceed developer and builder needs while managing a convergence of technologies and services over its fiber networks.

Over a seven article series, we'll take you behind the scenes of this innovative company. Connexion Technologies is not strictly a vendor nor a service provider but a technology partner and investor. Connexion uses its capital, not the developer's, to design, deploy and operate powerful fiber-optic networks. Because Connexion has a vested interest in the community, each step it takes to deploy fiber is with the developer's best interest in mind.

Take, for example, Connexion's strategy to invest more capital upfront to provide a more reliable, "future-proofed" network. Keep in mind its unique and advanced marketing services, which help developers sell their homes at a faster rate. Or consider Connexion's strategy to separate the network from the service provider, offering control and freedom, while ensuring the highest quality of entertainment and communications services. This month, we start with the foundation of fiber-optic deployment: Connexion's Engineering and Construction Department. By customizing each design – and steering clear of a generic one – Connexion provides its developers the best possible outcome.

How the design started...

It's a typical day in the office and Alan Williams, Executive VP of Engineering and Construction for Connexion Technologies remembers the beginning. "Really, our design started in a field behind our office. We sat out there and figured

out how we were going to make this work," he said.

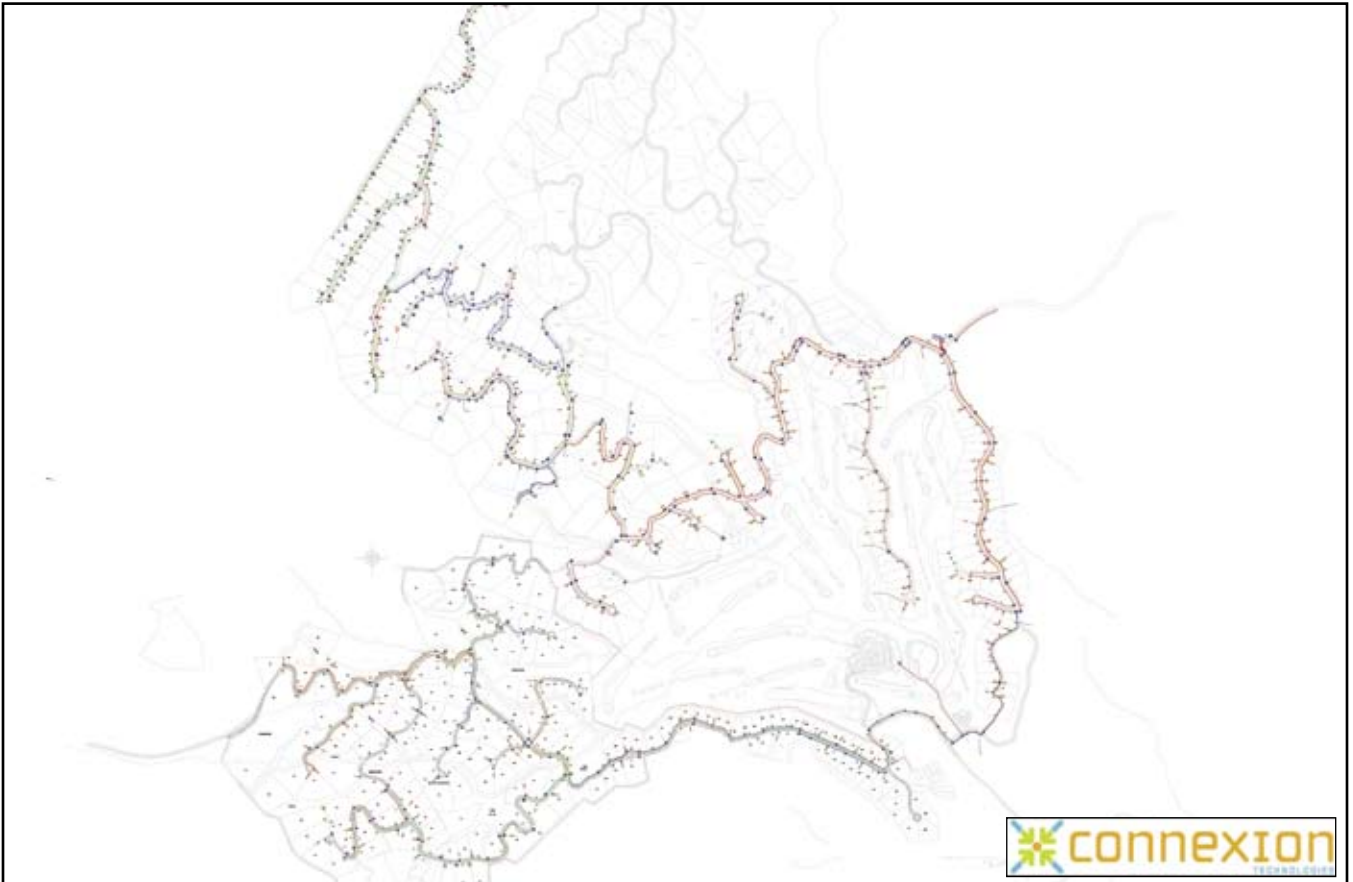
The principle is simple: customized fiber-optic deployment. Connexion has no generic deployment design; it creates an individual plan for each community. Because it strives to use an innovative

approach, there are rarely problems for which Connexion can't find a solution. "We design the fiber-optic networks based on the layout of each specific development, install them on the developer's schedule and then maintain them," Williams said.

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The first steps...

As far as specifics are concerned, lot sizes determine the actual design. "We go through every effort to detail our plans as much as possible," said Ben Wright, Director of FTTH Design Engineering for Connexion Technologies. "When our designs are released for construction...it's like releasing an as-built plan



Fiber distribution plan for Bright's Creek in Mill Spring – a mountainous area.

up-front so changes on the back-end are minimal.”

Attention to detail is key to Connexion’s success. From the initial meeting with the developer, to breaking ground, and then installing the infrastructure, Connexion is involved every step of the way. The first meeting is intended to settle pre-design requirements (see box).

Details...

Once the pre-design requirements are solidified, Connexion creates a design and cost estimate and then *invests* the resources required for deployment. Then its construction crew starts laying the conduit and pulling fiber. Not all companies protect their fiber lines in conduit. It’s a more expensive and labor-intensive process, but Connexion recognizes that using ducts helps to ensure greater reliability and future flexibility as needs evolve. The company is willing to invest more capital in the beginning in order to ensure a successful deploy-

Pre-Design Review

Ben Wright, Director of FTTH Design Engineering, explains the pre-design requirement list.

- Recorded site plan: shows all utilities, easements, and right-of-ways
- Address of the head-end building location
- Electrical layouts of power companies: show transformer locations
- Phasing Schedules
- Outside Service Provider details: locate entrance facilities
- Additional amenity requirements: hot spots, etc.
- Building plans: show number of buildings, units per building and layout

ment, requiring minimal maintenance in the future – a clear benefit for the developer.

Furthermore, Connexion uses ribbon fiber. Again, the company may have to spend more upfront but it’s easier to maintain. Connexion uses the Home Run design- with no splits between the central office and the end-user. This design means that fiber doesn’t stop at the edge of the property but runs directly to each house. It’s a more expensive option. But it’s easier to install, maintain and support and it offers greater benefits to the end user. Connexion has eight of its own crews that cover a wide area around the clock seven days a week to splice and pull fiber.

“Our fiber backbone is fed from the fiber distribution hubs at our Central Office on each site,” Wright said. “We run 12 fibers for every eight homes passed in order to leave spare fiber throughout every property. This creates 1.5 fibers for every home on the property using 1:32

CUSTOMIZED FIBER-OPTIC DEPLOYMENT

distribution splitters to cut down on fiber counts from our head-end building.”

Four Key Principles...

Details are important but the Engineering and Construction Department's innovative tactics revolve around four principles: installation, maintenance, developer's schedules and needs, and flexibility (see box).

The Four-Step process

Alan Williams, Executive VP of Engineering and Construction, explains the four steps of design.

1. Installation

- a. Stay in private sector
- b. Don't use subcontractors

"We started out trying to sub out and had a lot of problems because we couldn't get the quality we wanted. So we did it ourselves. There aren't many companies that do that."

2. Maintenance

- a. Use ribbon fiber
- b. Easier to maintain and split several ways

"We install it and then support it. It's all about what we can maintain and service once we're done."

3. Developer's schedules/needs

- a. Nurse developer through maturation stage
- b. Follow developer

"We have to be flexible enough in our installations so that we can move around with the developer. He's not going to stop his project...he follows supply and demand so he can bounce around his whole development."

4. Flexibility

- a. Address developer's build-out requirements
- b. Cater to developer

"Because we're private we don't have a standard. We minimize road crossings to save the developer money and modify our head-ends to match his architecture. We'll do whatever it takes to please the developer."

Experience...

Then, of course, you've got to put those principles into action. Take for example, Tributary at New Manchester in Douglasville, near Atlanta. "Because of the change in demand for property types, the developer rearranged the order of his phase build out," Williams said. "We

followed the developer's needs."

In order to do that, Connexion found an innovative solution. It ran four miles of aerial fiber across tree tops to get from one phase to another. The design team crossed over six undeveloped phases at Tributary. "We four-wheeled it," Wright said. "We took the fiber over

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the woods and through uncharted territory to bring connectivity to the next phase." This solution is temporary until the rest of the property builds out between the two phases. As the property grows, Connexion will move these aerial lines below ground.

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Bright's Creek in Mill Spring, near Asheville North Carolina is another example. Large lot frontage and winding mountain roads created issues in the field. There was minimal room to pull fiber on the side of the mountain. "We spent lots of time on-site during the design process in order to cut down on these problems and field changes later on," said Wright. "Typically, design time is spent at a desk in an office."

Bright's Creek also had another unusual requirement. It needed a network over which to run its business. It tried to run its commercial operations over the network Connexion put in for the residents. Because it did not mention this request until after the network was built, the residential bandwidth that Connexion initially engineered was not enough to accommodate commercial needs as well. Connexion revisited the property's commercial bandwidth needs and determined that Bright's Creek should run its business applications over a separate fiber network. "They were trying to run a gig network through a 12 meg net-



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work," said Phillip Watkins, Area Vice President for Connexion Technologies. "So we set up a point-to-point fiber business network...run totally separate from the FTTH deployment that we originally built."

When Bright's Creek asked Connexion to come back and help solve its problem, Connexion did. "They provided a consultative approach and helped develop our plan of attack," said Scott Wigginton, CFO of Bright's Creek's developer, Wingfield Properties. "They took a look at what we were doing and came up with a strategy that fit our business operating needs."

There's Ginn Reunion Resort, a development outside of Orlando. Unlike Bright's Creek, Reunion has a flat landscape. The challenges are caused by the range of property types. They include single family, multi family, condos, mid rise, hotel hospitality and rentals. Dealing with the different types of design is challenging because single-family homes differ greatly from other designs.

"It's also unique because 50 percent of the property already existed when we partnered with them," Wright said. "Planning to design 8,500 units on one property is challenging enough, without having half of it be an overbuild."

"The trick to overbuilding is not disrupting what is already there...not disturbing the daily lives of the residents,"

said David Burman, Regional Vice President of Reunion's developer, Ginn Resorts. "They've completed 65 percent of the overbuilding process without disrupting a thing."

Reunion is also a resort-type property with a lot of amenity requirements. This leads to extra considerations. For example, Reunion hosts events like professional golf tournaments. When Reunion asked Connexion to set up the telecommunications for The Ginn Open at Reunion, Connexion jumped to the occasion. Although Connexion had never done anything like that before, its top priority was catering to its developer's needs. The telecommunication services were successful...so successful, in fact, that Ginn has asked Connexion to help out with more golf tournaments.

"What's special about Connexion is that there's nothing they won't try," said Burman. "They really cater to our unique needs. Every time we come to them with something...they deliver." **BBP**

About the Author:

Caitlin Clinard is the Press and Media Coordinator for Connexion Technologies. The company designs, builds and operates fiber networks in single family, multi family, high rise, resort and hospitality properties from coast to coast. Caitlin can be reached at caitlin.clinard@cnxntech.com. See also www.connexiontechnologies.net.

Join us next month for a look into another innovative technique that Connexion uses to exceed its developers' and homebuilders' needs. Find out about Connexion's strategy to invest more capital upfront to provide a more reliable, "future-proofed" network to its customers.