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Structured Wiring: A Viable Option for Electrical Contractors

Tampa chapter member George Blanton of Square D is a man with a mission. "I want builders to see electrical contractors as the primary resource for all their wiring needs," he says. "That includes pulling low voltage wires behind the walls - or structured wiring."

Traditionally the province of low voltage workers, structured wiring, included with whole-house electrical work, can give the electrical contractor single-source responsibility for all the wiring in a new home.

The plan for adding telecommunication wiring to today's new homes hasn't changed much over the years. Typically, a home is wired for a minimum of 2 telephone outlets - one in the kitchen and one in the master bedroom, with wiring normally designed for voice, not data, transmissions. These connections and any additional phone outlets are daisy chained off the one phone service twisted pair wire.

Unlike telephone service, television service (cable TV, outside TV antennas or satellite TV systems) may or may not be wired in during construction.



S&S Electric's Shawn Smith, left, and Graybar's Scott Davidson demonstrate the benefits of structured wiring to the ECF Pinellas chapter meeting in September. Approximately 50 members attended.

Either way, the typical TV service is distributed throughout the home using inexpensive coaxial cable and signal splitters.

With the popularity of the internet, the typical homeowner connects via a telephone modem rather than through a broadband service. Also, many homes have more than one computer. These are typically not networked together, meaning each com-

Pre-Wiring Means Easy Installation

Category 5 cable is used for phone, fax, and modems. It is ideal for high performance telecommunications applications including ISDN and xDSL services, home office, Internet access, computer data, and fax transmissions. Cat5 cable consists of 4 twisted pairs of high quality copper wire enclosed in an outer jacket.

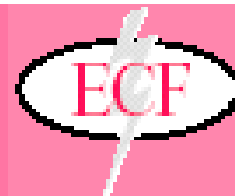
It is engineered to be highly immune to interference, which allows it to support bandwidth requirements up to 100 MHz. Cat5 supports data networking protocols including 10Base-T (Ethernet), 100 Mbps Fast Ethernet, and 155 Mbps ATM (Asynchronous Transfer Mode). More and more applications, including audio and video, are being developed which are making Cat5 the standard for residential communications and data distribution.

RG6 Quad-Shield coaxial cable is used for television and video. It is ideal for high bandwidth video and data applications including digital cable, digital satellite, digital cable modem services and high-speed interactive video services.

RG6 Quad-Shield coaxial cable consists of an insulated center wire and four layers of shielding. The additional layers of shielding give this cable its high immunity to interference, which meets the most stringent FCC and cable company performance bandwidth requirements up to 2 GHz.

puter must have its own separate peripherals for printers and scanners and making it difficult for them to share files.

The basic concept for structured wiring is to determine the present and future electronic needs of the home and prewire it with high-quality cables to provide both convenient availability of the desired services plus reliability expected by the homeowner.



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Technology Fast Becoming A Necessity

With the rapid pace of technology today, things are changing, and they're changing fast. Homeowners demand more: networked home computers and home offices; home theaters and entertainment systems; high speed internet connectivity; and reliable security systems. Indeed, many of these systems are no longer luxuries but are must-haves for today's families.

According to Parks Associates, a research firm that analyzes emerging technologies for the home, up to 40% of new homes will have structured wiring systems installed as early as 2004. Their homes will need to be wired so they get what they want. And who better to do that wiring than the electrical contractor?

According to George, builders will save time and money by using one contractor to perform both electrical and structured wiring installations. "It will give builders one person to turn to for all their wiring needs," he says.

Shawn Smith of S&S Electric is a believer. "We think that one day all homes will feature structured wiring. Our goal was to make sure it was the electrical contractor who installed the system."

S&S, a Pinellas ECF member, started slowly. "We wanted to grow our business by adding additional services to the homes we are already working in, and structured wiring was the way to do that," says Shawn. "We started by introducing our builder customer to the concept of structured cabling systems. In May of 2000 we began installing highspeed communications cabling as standard for all our customers. By the end of this year we will have installed 500 systems. We have commitments for 1,200 systems next year."

S&S teamed with Square D's Multi-Link to offer customers structured cabling systems that

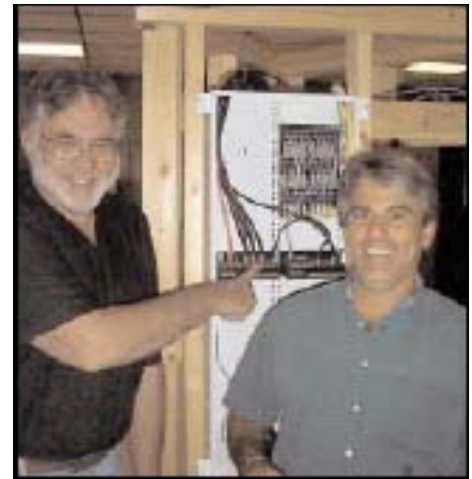
will meet their needs, both today and tomorrow. According to a press release from S&S, this system has unique features and price points.

Shawn admits, "There's one other reason we got involved in structured wiring - ego. We hated to see someone else pulling wire on our homes."

"I truly believe the contractors are leaving money on the table," affirms

George. "If they can get used to the idea, and get training on structured wiring, they'll be better off, their builders will have one reliable person to turn to, and the homeowners will get what they want in their new homes."

For more information on structured wiring, or for details on the next 4-hour Square D seminar: "Structured Wiring: How to Install - How to Sell", contact your local Square D office or email George at BlantonG@SquareD.com.



Joe Bolesina, left, Chief Electrical Inspector of Pinellas County, and Matt Killenn, Chief Electric Inspector of Pinellas Park, pose in front of the Square D Multi-Link Structured Wiring System at September's Pinellas chapter meeting.

Table 1: Pre-wire Schemes

		Typical Room		Media Center			Home Office		
Good	Phone/TV	Wire Type	Quantity	Phone/Satellite Receiver/AV Modulators	Wire Type	Quantity	Phone/TV/ Cable Modem	Wire Type	Quantity
		CAT-5	1		CAT-5	1		CAT-5	1
		RG-6	1		RG-6	3		RG-6	2
Better	Phone/TV Ethernet	Wire Type	Quantity	Phone/TV/ Ethernet/AV Satellite Receiver/AC Modulators	Wire Type	Quantity	Phone/TV/ Ethernet/ Cable Modem	Wire Type	Quantity
		CAT-5	2		CAT-5	2		CAT-5	2
		RG-6	1		RG-6	3		RG-6	2
Best	Phone/TV Ethernet Satellite Receiver	Wire Type	Quantity	Phone/TV/ Ethernet/ Satellite Receiver/AC Modulators	Wire Type	Quantity	Phone/TV/ Ethernet/ Satellite Receiver Cable Modem/ Hi-speed Data	Wire Type	Quantity
		CAT-5	2		CAT-5	3		CAT-5	3
		RG-6	2		RG-6	3		RG-6	3

Recommended Pre-Wire Schemes

Structured wiring cables run from the wall boxes in the various rooms of the house directly to the structured wiring enclosure (called home run wiring). Two types of wire are used for communication and entertainment: CAT-5, made up of 4-UTP (unshielded twisted pairs), and RG-6 Quad-Shield coaxial. Square D recommends four pairs. RG-6 coaxial wires handle television (antenna or cable), satellite dish, cable modem, security cameras and AV modulator signals. The wires in Table 1 run from the enclosure to the locations indicated in the table.