



# Contributors to Casey's House

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## CONCRETE

DCA ReadyMix

## CONCRETE PUMPING

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## SUNROOM

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## SURVEY

Dietrich Land Surveying

## TERMITE BOND

Wayne's Environmental Services

## TILE

Ace Marble and Tile

## TRIM CONTRACTOR

Bobby Lynn Services

## WINDOWS/DOORS

Andersen Windows

Wilson Lumber Company



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Huntsville

Madison

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Main Floor 2950 +/- sf  
 Second Floor 1840 +/- sf  
 Total Heated and Cooled 4790 +/- sf  
 Front and Rear Porch/Garage 1074 +/- sf  
 Total Area Under Roof 5864 +/- sf

Main Floor

2<sup>nd</sup> Floor

## Casey's Story

In March of 2003, while on Spring Break in Panama City, FL with his Dad, Casey Whitson was hit by a drunk driver. Both of Casey's legs were broken, but the real damage was the brain injuries Casey sustained. Casey is now a quadriplegic.

After caring for Casey the last two years, Casey's parents realized they needed help. Their goal was to include Casey in all family activities, but their house wasn't equipped to handle the demands of Casey's daily routine. Unable to move, Casey had to be turned several times during the day and night. Casey had to have continuous therapy and his parents' home could not adapt to these many demands. A solution had to be found.

In May of 2004, the Huntsville Madison County Builders Association undertook a special project for Casey Whitson that would eventually become the project known as Casey's House. The Huntsville Madison County Builders Association and its Foundation committed to building a home for Casey, which was designed and built using Universal Design Principles and Guidelines. The home would allow total accessibility for Casey, who is completely immobile, to live and interact with his caring family and friends in this special house, Casey's House. The home was designed to give much needed bathroom,

bedroom and therapy space for Casey, as well as provide for comfort and functionality for his caregivers. It would provide environmental controls, computer connectivity for monitoring and other technologies to make his life more comfortable.

As you can see, this goal has been realized. Construction Manager John Allen of Southern Construction and Design, Inc. and the Huntsville/Madison County Builder's Association, supported by many individuals and businesses volunteering services and products, have built "a different kind of house" to accommodate Casey's needs.

"We want people to see that this house is designed and constructed specifically for an individual's needs, and for his rehabilitation and comfort," Allen said. "I am proud that the Huntsville/Madison County Builders Association and its members have made this project and this house a reality for Casey and his family. It has been an honor for Southern Construction and Design to be involved."

"I am so thankful that I still have Casey and that he is better than he was even a year ago. And we are blessed to have wonderful people supporting us in making a better life for Casey," Cindy Christopher, Casey's mother, said.

## Universal Design Features

- 1) Insulated Concrete Forms** - The use of the insulated concrete form product by EcoBlock, allows the home to be constructed with structural superiority and thermal stability. The ICF construction yields an effective R40 exterior wall. This is very important when Casey has difficulty regulating his body temperature. Further, the structural strength will protect Casey from the many frequent and constant storms of our area. Additionally, an ICF home is twice as quiet as a standard wood frame house. This will give Casey the opportunity to rehabilitate in an environment that will be conducive to his recovery. Finally, this wall construction will save over 50% in energy costs every month, and thus further provide for Casey's care versus the payment of increasing energy costs.
- 2) Video Monitoring** - Video cameras have been placed in Casey's Room to allow 24/7 monitoring of Casey. These cameras are 0 lux, i.e. night vision, and are color. They can be fed through the structured wiring CAT5 package throughout the home, to video monitors, and also fed through the web and accessed at the parent's place of work.
- 3) Elevator** - This elevator is a Thyssen Krupp standard residential elevator. This allows Casey to access all parts of the home, most importantly, the Rehabilitation Room on the second floor. The location of the Rehabilitation Room is important because it is an area that Casey will know that is his area to work out, and know that he will be able to access his equipment and the upstairs of the home.
- 4) Storm Shelter** - Casey's room has completely encased concrete walls and ceiling. This ceiling and room is designed as an above ground storm shelter based on FEMA standards. Of course, the weak links are the windows, which are not allowed in a FEMA storm shelter. On this matter, Andersen "Storm Watch" windows were selected. Also, custom fabricated steel shutters are to be designed for use in his room as well.
- 5) Andersen "Storm Watch" Windows** - Andersen "Storm Watch" windows were selected for Casey's Room to help protect him during times of storms against airborne debris. These windows are rated for 150 mph wind pressures and debris impact.
- 6) Audio System** - The audio intercom system will be used as a means of music therapy for his rehabilitation as well as a security measure for the caregivers to be able to communicate throughout the home.
- 7) Floor Coverings** - The floor coverings chosen in the locations of low traffic for the integration of the wheelchair into every area of the home. The coverings are low pile carpet and low pile carpet tiles. The wheelchair will be able to effortlessly roll onto those floor systems. The selection in Casey's Rehabilitation Room was a low pile carpet tile for those times that Casey is exercising or stretching.
- 8) CPVC Trim** - The use of cellular poly vinyl chloride protects the trim work from the constant and periodic scrapes of a wheelchair.
- 9) Sunroom** - The addition of a sunroom is important in the integ-

throughout the home. The area is heated and cooled, and allows Casey to share porch, patio, and backyard events in a controlled environment. It also allows a fantastic place for Casey to enjoy the warmth and the healthy benefits of the natural sunlight.

- 10) Emergency Generator** - The emergency generator was installed to provide power during those times of the electrical power grid not being available. The generator is powered by natural gas and is a 7.5 kW rated power device. The generator powers the circuits in Casey's Room and Casey's Bathroom, as well as the Elevator, the Kitchen, and the lighting circuits from the Master Bathroom to Casey's Room. These circuits allow operation of Casey's medical devices and the portable air conditioner that can be brought into Casey's Room to cool the room. Additionally, the generator will provide power to the elevator if Casey is in the Rehabilitation Room when the power is lost. As well, if power is lost in the house at night, lighting circuits will be powered to easily access the house to Casey's room. The front porch was designed to provide an access point for Casey from his room to the garage. The doors are provided at the exit underneath the porch, and thus protect from the weather. Of course, the garage is also protected through the house as well.
- 11) Heating Controls** - The heating controls in this house are designed to provide the maximum comfort for Casey. These controls are a SEER (a measure of efficiency) and variable speed.

Due to the ICF walls, the tonnage in the home was reduced to 50% of a standard wood frame home. Two units provide the cooling for the downstairs, while another provides for the upstairs. Additionally, the Sunroom is cooled by a mini-split heat pump system. The units for the main house, have an integral humidification section, UltraViolet lighting to protect from airborne contaminants such as molds, and airborne viruses, as well as electrostatic air filtration. These units will provide the ultimate control of the indoor environment and provide clean, humidified, and filtered air to the occupants of the home. In summary, Casey will not have to worry about the indoor air quality of his home, and will not be susceptible to the many airborne pollutants, allergens, and molds, that would inhibit his rehabilitation.

- 13) Foam Insulation** - As a complement to the ICF wall construction, TruSeal foam insulation was used to insulate and further seal the house from infiltration. This product is a blown in foam product, which provides superior insulating values in wood frame wall cavities. This product will provide for reduced tonnage in the heating and cooling system, and also provide for minimal air leakage into the structure.
- 14) Casey's Bathroom** - Casey's bathroom allows for the shower system to provide a complete roll in type entry into the shower. The tiling on the floors and walls will allow for an ease of cleanup after each use. Casey's vanity has been raised off of the floor to protect the base from water infiltration. Additionally, the toilet in Casey's bath is a Comfort Height, or ADA, style toilet.

## About the Builder

John Allen, PE, CGR, CAPS, of Southern Construction & Design, Inc., a family business, has been building custom homes and providing services to the local area for over 8 years. SCD Inc. is a member of the Living Custom Home Builder Program, Huntsville/Madison County Builders Association (HMCBA), Home Builders Association of Alabama (HBA), and National Association of Home Builders (NAHB).

Mr. Allen is an Alabama licensed residential homebuilder, a Certified Remodeler (CGR), a Certified Aging in Place Specialist (CAPS) and a professional engineer (PE) in the State of Alabama. A 1994 mechanic

at Southern University, Mr. Allen is a member of the Board and Executive Committee of the HMCBA. He also is a City of Madison Planning Commissioner, a member of the Madison Rotary Club and the HMCBA Remodelers Council, where he is a past president.

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