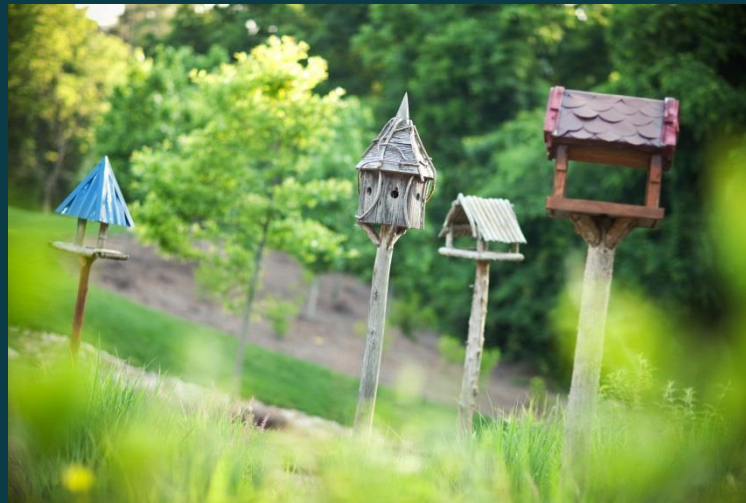




# ***Chatham County Board of Commissioners Work Session***

*February 20, 2017*

## **Green & Sustainable Development Practices at Briar Chapel**



# **Work Session Outline**

- 1. Shared Values - Chatham County and Newland Communities Setting Precedent in Sustainable Development**
- 2. Building Science and Results**
- 3. The Chatham County Buyer/Resident**
- 4. Community Goals**
- 5. Closing with Questions and Answers**

# SHARED VALUES: Public-Private Partnership

## Leading the Charge & Raising the Bar

**100%** Percentage of Briar Chapel homes that are green certified

**34%** Briar Chapel's percentage of green certified homes in NC

**46%** Briar Chapel's percentage of green certified homes in Triangle

**\$1,000,000** Briar Chapel residents energy savings to date

**13,000,000** Pounds of greenhouse gas pollution prevented to date

*\*Source: SEM Briar Chapel 4Q16 Report*

# Largest Green Community's Market Acceptance

**314** Homes sold in Briar Chapel in 2016

**1,300** Total homes sold in Briar Capel

**#1** Top-selling community in the Triangle  
(314 homes sold in 2016) *\*Source: MetroStudy 4Q16*

**#40** Top-selling master-planned community in the nation  
*\*Source: Robert Charles Lessor Company (RCLCO) 2016*

# GREEN = GREEN

**\$2,400,000**

Annual Chatham Co. revenues  
(1,000 homes & Veranda businesses)

**\$9,100,000+**

Briar Chapel one-time capital revenues for  
County facilities (2016)

**447**

Sustained annual jobs (average 2008 to mid-2016)

**\$108,000,000**

Cumulative labor income in Chatham County

**631**

Total permanent jobs in Chatham Co.  
(1,000 homes & Veranda businesses)

**\$17,400,000**

Annual labor income in Chatham County  
(1,000 homes & Veranda businesses)

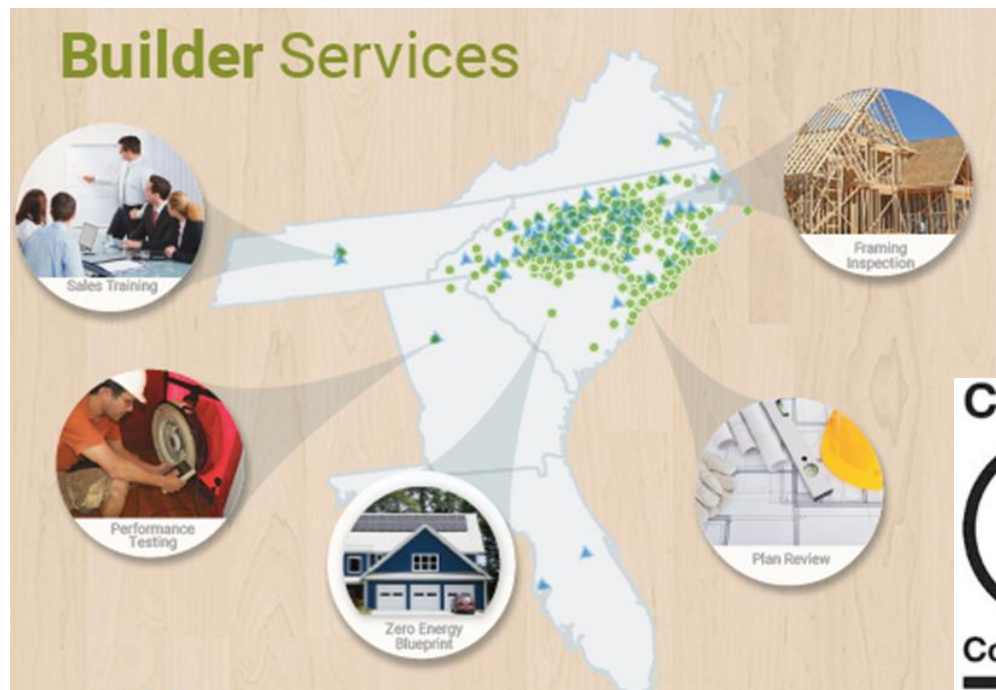
*\*Source: DPFG, Inc. July & Nov. 2016 Fiscal Benefits and Economic Impacts of Briar Chapel*

# Strategies for Sustainable Success

- Intentionality: Values and Commitment
- Green Infrastructure Investment
  - Program Design: system's thinking (not one size fits all)
  - Contracts & Guidelines
  - Review & Enforcement
  - Reporting
- Green Partnerships
  - Builders with Shared Values
  - 3<sup>rd</sup> Party Rater and Advisor (Southern Energy Management)

We change the way people make and use energy.

We like to measure things.





# Briar Chapel Road to Green Program Evaluation

- The Nascar Effect...not so effective



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## Briar Chapel Green Building Standards

### Newland Communities

#### Builder Checklist - VERSION 2, January 08

Briar Chapel builders are automatically enrolled in the Energy Star for Homes program as part of the service fee through Southern Energy Management, and will receive an Energy Star certificate upon successful completion of the below items. These standards also meet the requirements for the Environments For Living® program Platinum Level, the NC HealthyBuilt Homes Program, and the HBA-DOC Green Building Initiative Program. Builders will have the option of enrolling in these programs to receive official certificates and/or related guarantees from these programs for their homes.

Items	EFL Platinum	HBH	DOC GBI	Comments
<i>Item numbers highlighted in blue correlate with the EPA Energy Star for Homes Program</i>				
<b>Site and Landscaping</b>				
D	Create a protection and maintenance plan for priority natural resources/areas during construction. (See Section 1.4 of the GBI program for guidance in forming the plan).	Site 6	1.3.1.B	Newland doing
D	Develop and implement storm water management plans that minimize concentrated flows and seek to mimic natural hydrology.	Site 1	1.3.5.B	Newland doing
D	Implement compact development strategies, with maximum impervious area no greater than 24% of total project area, and min 50% of development dedicated to permanent open green space.	Site Innov. nt	1.5.9	Extensive network of bike and walking trails also designed in development

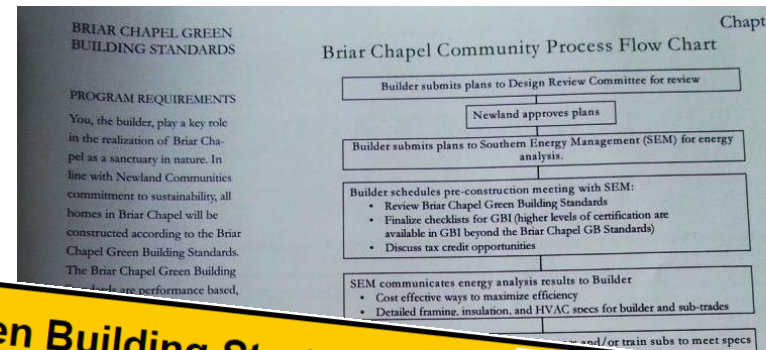


# Briar Chapel Road to Green – Builder Training

- Get it in the Guidelines
- Builder Orientation
- 100% Insulation and Final Inspections
- Education is constant
- Communication is essential



**Home Innovation**  
NGBS GREEN CERTIFIED™



## Briar Chapel Residential Green Building Info Pack

Welcome to Briar Chapel! Southern Energy Management is excited to be your Developer Partner, providing the technical assistance and 3<sup>rd</sup> Party verification services required to achieve Energy Star and Green Building certifications required for the Briar Chapel Community.

As a new builder in the Briar Chapel community, you will need to incorporate standard construction process to achieve Energy Star and Bronze Level Green Home Builder certifications. Southern Energy Management provides the consultation, technical assistance and documentation for builders in Briar Chapel to achieve Energy Star and Green Building certifications.

### Overview

There are 3 main steps to complete prior to construction start in Briar Chapel:

1. Builder Orientation meeting with Southern Energy Management
2. Complete SEM paper
3. Complete SEM paper

## Green Building Starter List

The following list, created by Southern Energy Management, is an example list of items that can be used as a benchmarking tool for Southern Energy Management Energy Star Builder Partners to perform an assessment of how close your project may be to achieving green certification.

**DIRECTIONS:** Circle any items you are already doing. Have a lot of items circled? You are ready to begin the process of enrolling your home in a green certification program.

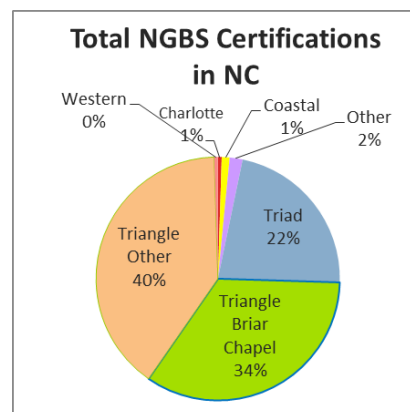
**Note:** Following this list does not guarantee a home will achieve certification.

GREEN BUILDING PRACTICES		Points Available	Comments
<b>502 PROJECT TEAM, MISSION STATEMENT AND GOALS</b>			
502.1 A knowledgeable team & mission statement.		4	
<b>503 LOT DESIGN</b>			
503.3 Soil disturbance and erosion are minimized by one or more of the following: (also see 504.3)		5	
(1) Construction schedule minimizes soil exposure		5	
(3) Clearing/grading limits shown on the plan		5	
503.5 A landscape plan limits water & energy use & preserves/enhances the natural environment		5	
(2) Native plants are used			provide plans per submittal

# Briar Chapel Residential Program



**50,000<sup>th</sup> NGBS home certified in Briar Chapel!**



**Home Innovation**  
NGBS GREEN CERTIFIED™

- 100% of homes verified
- Requirements for Site, Water, Energy, Materials, and IAQ
- 3<sup>rd</sup> Party Above Code Inspections throughout construction
- Foundation for renewable energy systems

# Briar Chapel Stats

## Average Home Energy Savings / Yr

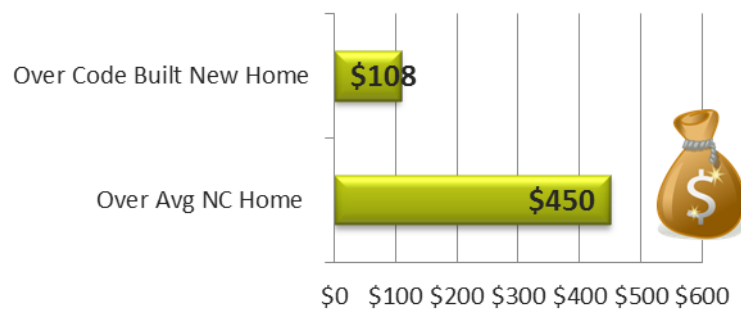


**22%**

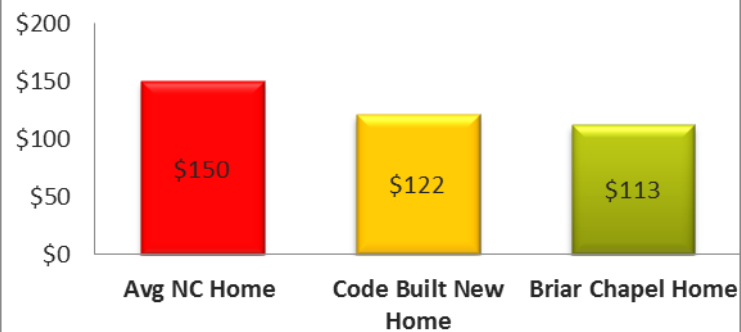


More Energy Efficient than Avg NC Home

### Annual Home Energy Savings



### Average Monthly Energy Bills



**Total Community Energy Savings to Date:**

**\$915,045**

Energy Efficiency Savings:

**\$887,298**

Solar Energy Savings:

**\$27,746**



# Briar Chapel Residential Program

## Zero Energy Blueprint



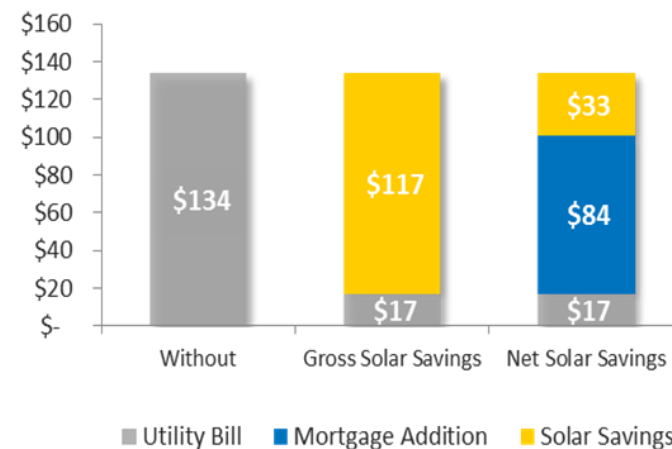
### Briar Chapel ZEB Program

- Builder / Developer Direct Solar Pricing
- Solar rolled into home mortgage
- Utility savings pay for mortgage increase

Shifts monthly expenses away from electric bill and into your home's value



- Solar friendly ARB and HOA
- Net Zero Ready Homes
- Incentivize new construction solar with Zero Energy Blueprint Program (2016 rollout)





- Private, locally owned, 42 year old business
- 2017 Projected Business Plan
  - \$80 M Revenue
  - 180 Starts
  - 40% of Business in Chatham County
- All homes are certified through:
  - Energy Star, and
  - National Green Building Standard



## **What does it mean to build a High Performance Home?**

Incorporate Building Practices that exceed the local building code in several key areas:

1. Energy Efficiency
2. Indoor Air Quality
3. Water Conservation
4. Thoughtful use of Resources



## The Road to High Performance

- Properly Sized & Installed HVAC Systems
- Conditioned Crawl Spaces
- Low E Windows
- Reduced Air Infiltration
- Advanced Framing
- Improved Insulation
- Utilizing Smart Building Components
- Using Resources Wisely





## Benefits to our Clients

- Saves Money
  - Reduced Operating Costs
  - More Durable Product
- A More Livable Home
  - Increased Comfort
  - Improved indoor air quality



## Analysis of Briar Chapel High Performance Home

	Code	HP	\$ Saved	
Heating	534	369	166	31.0%
Cooling	254	157	97	38.3%
Water Heating	143	104	39	27.2%

Total Energy Costs Saved/year = \$302



## **Other Innovative Features:**

- Roof top solar arrays
- On Demand Hot Water Re-circulation systems
- Home Automation

# Newland Communities' Smart Community Plan

Newland has offices in 14 cities, is active in **22 different markets in 14 states**, and currently has **more than 42 communities** under development, making it the nation's **most geographically-diverse community developer**.

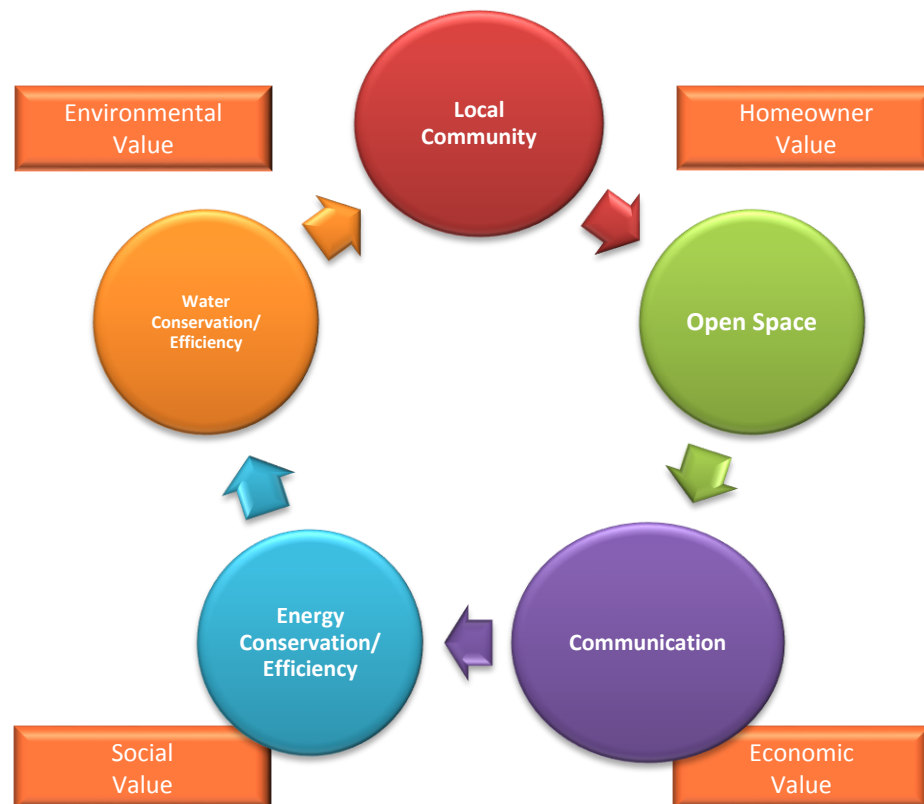


# Newland Communities' Smart Community Plan- A Holistic Approach to Sustainable Community Development

- Integrates **Five Focus Areas** encompassing a broad response to sustainability
- Three primary goals of the Smart Community Plan
  - Operate all communities under the framework of the **Five Focus Areas**
  - Collaborate on best practices throughout the Country
  - Measure the success through standardized metrics across communities

# Newland Communities' Five Focus Areas

- Local Community
- Open Space
- Water Conservation
- Energy Conservation
- Communication



***Chatham County Board of  
Commissioners Work Session  
February 20, 2017***