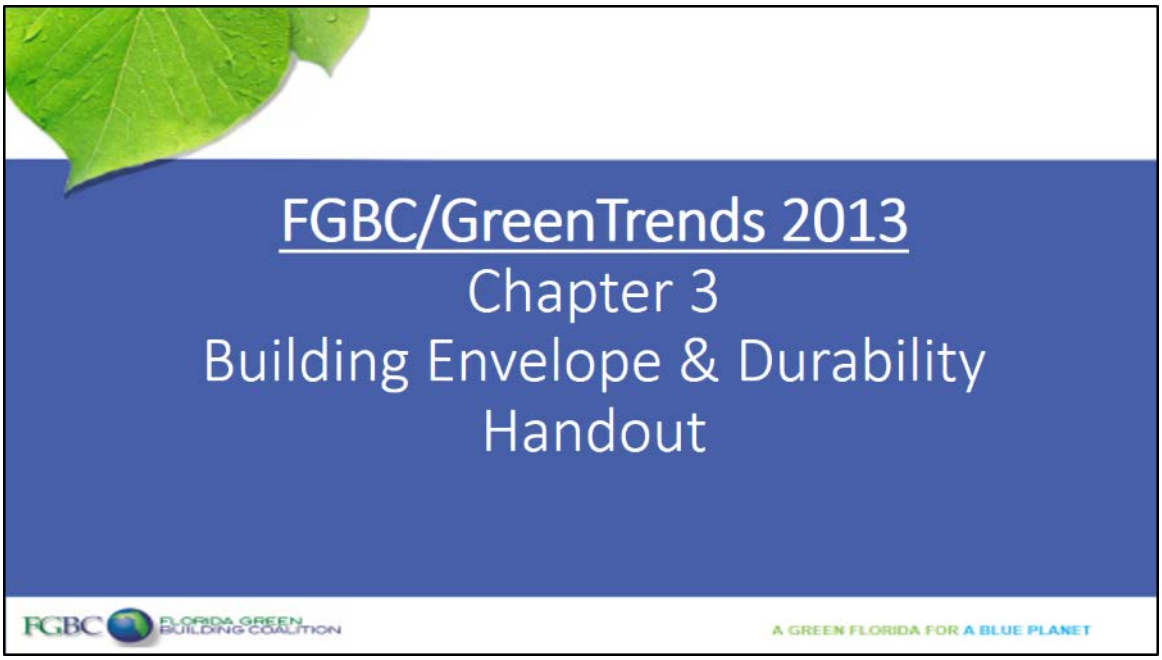
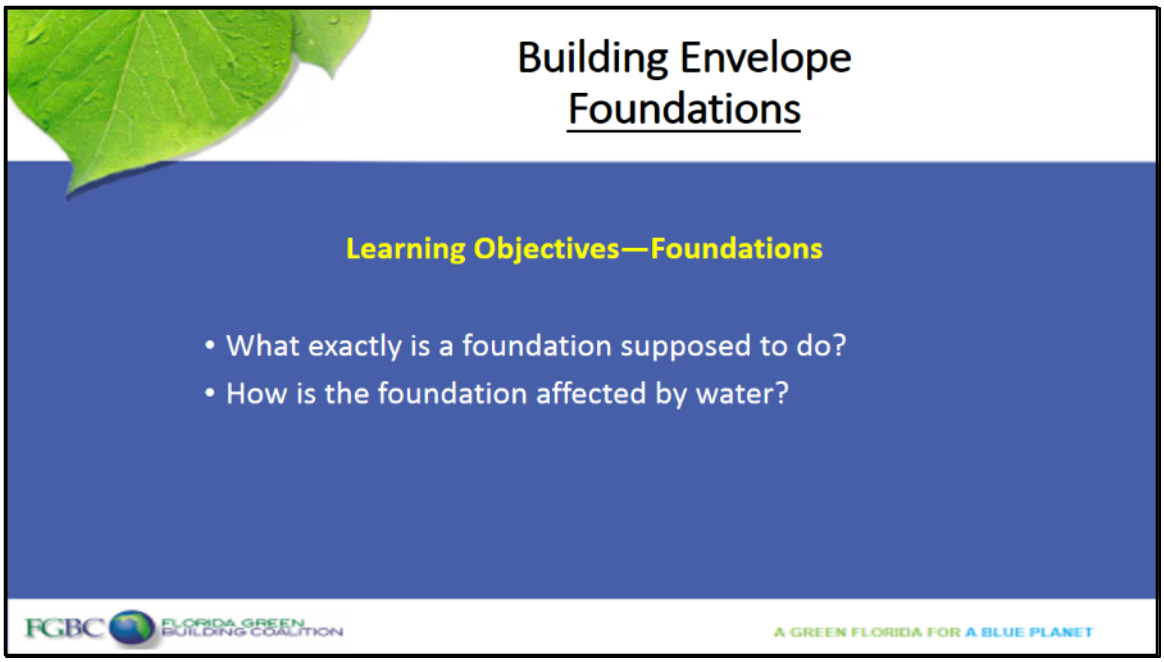

FGBC/GreenTrends 2013
Chapter 3
Building Envelope & Durability
Handout
FGBC
FLORIDA GREEN BUILDING COALITION
A GREEN FLORIDA FOR A BLUE PLANET

Notes:



Foundations can be built in many different ways although crawl spaces, slab-on-grades and basements are the three most commonly used in residential construction.
Regardless of the type, **all foundations must**:

- hold the building up
- keep the groundwater out
- keep the soil gas out
- keep the water vapor out
- allow the water and water vapor out if it gets inside
- keep the wind out
- keep the heat in during the winter
- keep the heat out during the summer

REDUCE BULK WATER

REDUCE WATER VAPOR TRANSMISSION

REDUCE AIR INFILTRATION

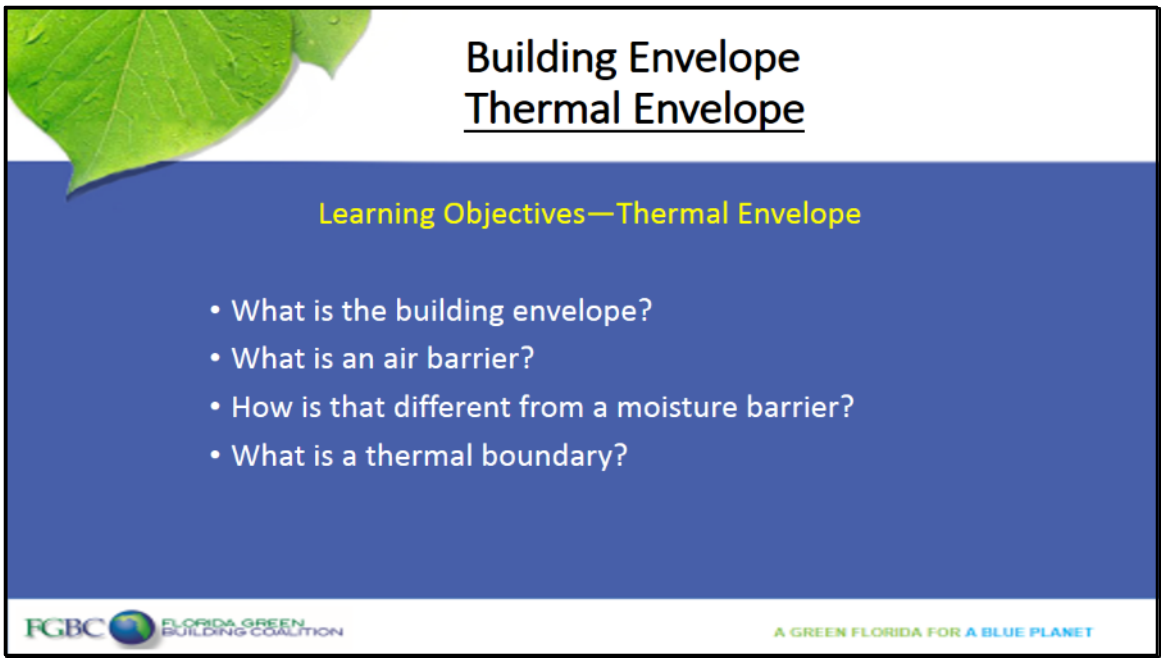
REDUCE HEAT GAIN & LOSS

http://www.buildingscience.com/documents/reports/rr-0206-foundations-moisture-resistant-construction

WATER DRAINAGE IS THE SINGLE MOST IMPORTANT ASPECT OF BUILDING A HOUSE FOUNDATION.
Water can be very destructive to foundations, basements and crawlspaces and will be very costly to repair.

Foundation/Water

- Capillary break beneath slab
- Slope away from patios, porches, walks, drives
- Slope away from home ≥ .05”/ft for at least 10 feet



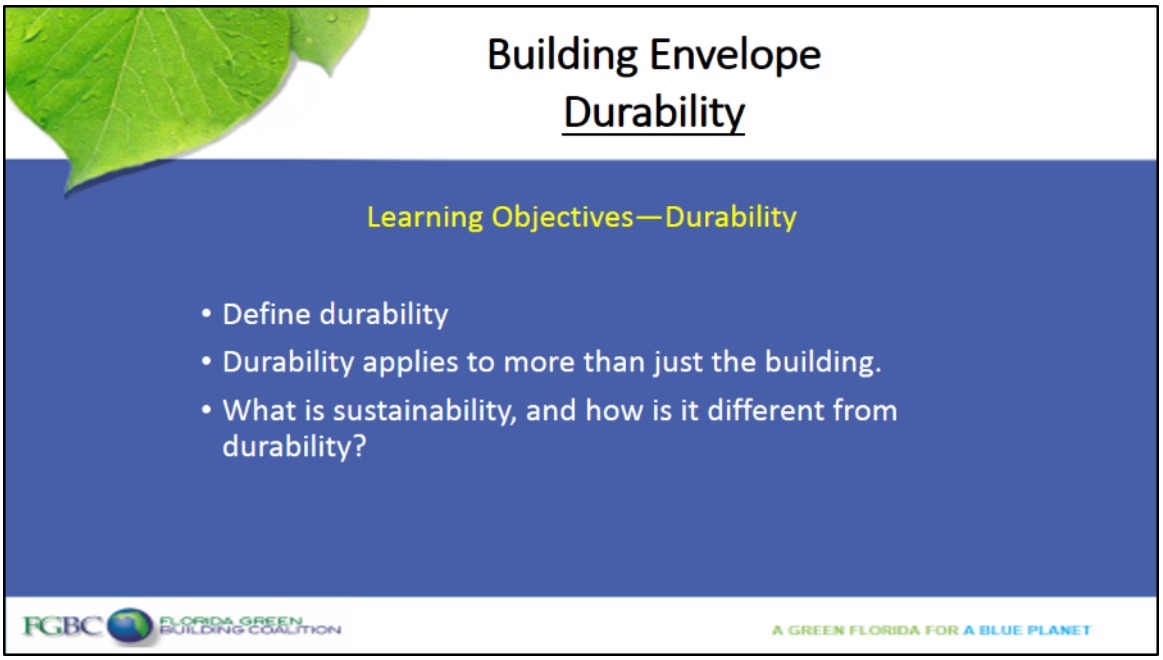
Building envelope—what separates the inside from the outside

Building Envelope Defined: The **building envelope** (or **building enclosure**) is the physical separator between the interior and the exterior environments of a building. It serves as the outer shell to help maintain the indoor environment (together with the mechanical conditioning systems) and facilitate its climate control. Building envelope design is a specialized area of architectural and engineering practice that draws from all areas of building science and indoor climate control. (Wikipedia)

Air barrier—controls unintended movement of air into and out of a building.

Moisture barrier (water vapor retarder) – not to be used inside in hot humid climates.

Thermal boundary– insulation.



1. The Canadian Standards Association "Guideline on Durability in Buildings" (CSA S478-95, Rev. 2001):
"The ability of a building or any of its components to:

- perform its required functions
- in its service environment
- over a period of time
- without unforeseen cost for maintenance or repair."

2. Building—materials and resources
Occupants—IAQ
Homeowner--education
Planet—energy

3. World Commission on Environment and Development in 1987.
Sustainability: "Forms of progress that meet the needs of the present without compromising the ability of future generations to meet their needs."
Sustainability is a much broader concept, while durability focuses on length of performance.