

**Presentation to**  
**North Carolina DHHS**  
June 23, 2010

**Facility Energy Efficiency &  
Sustainability (FEES) Work Group**

**Senate Bill 668**

Session Law 2007-546, **Senate Bill 668**  
signed into law on 31 August 2007



▶ **Section 1**

/// Energy and Water Standards

/// Measurement & Verification

/// Reports to Dept. of Administration

/// Education and Training

/// Buildings purchased by State must be constructed to same level

## /// Section 2

- /// Improvements in Existing Buildings (using low cost replacement components)

## /// Section 3

- /// Development of Comprehensive Energy and Water Plan
- /// (The heart of the Utility Savings Initiative – USI)

## Senate Bill 668

~~/// **Section 1**~~  
~~/// Energy and Water Standards~~

/// **Section 2**  
/// Improvements to Existing Buildings

/// **Section 3**  
/// Statewide Comprehensive Energy and Water Plan

## Senate Bill 1946

/// **Section 1**  
/// Codified in Senate Bill 1946

GS 143-135.35 - .40

## ▶ Energy Use Reduction

In new major facility construction

- 30% greater energy efficiency than ASHRAE 90.1–2004

In major renovations

- 20% greater energy efficiency than ASHRAE 90.1–2004



# Basic Requirements

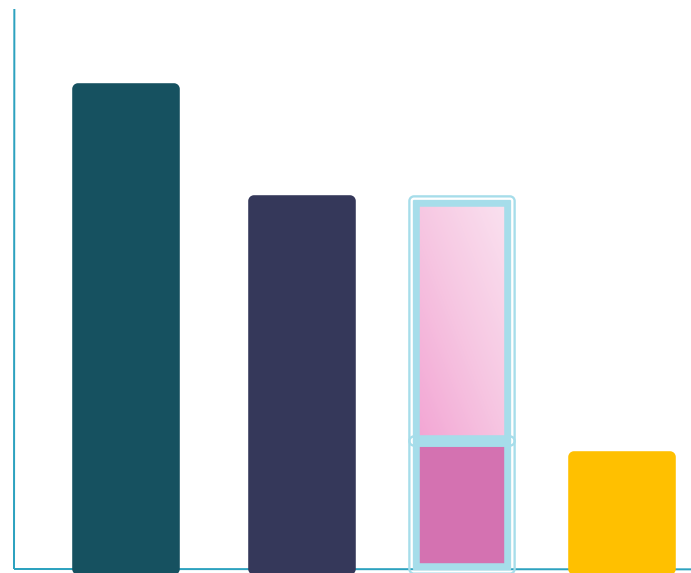
## 30% Better Than What?

Baseline (ASHRAE  
90.1-2004)

30% Better Goal

Your Typical Building

Exemplary Building



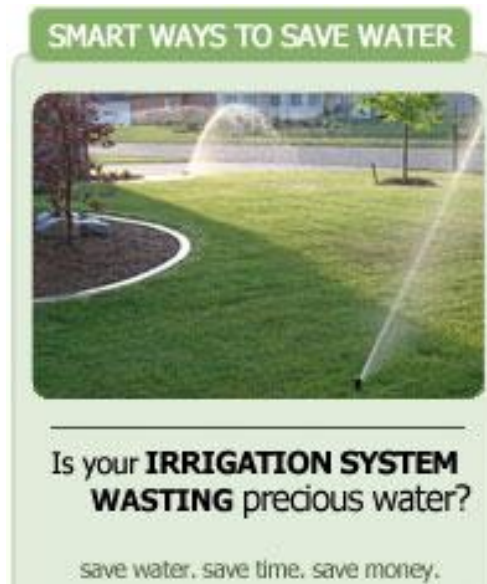
## ▶ Indoor Water Use Reduction

- 20% less potable water use as calculated for plumbing fixture performance based on 2006 NC State Building Code





- ▶ Outdoor Water Use Reduction
  - 50% less potable water for landscaping



- ▶ **Major facility construction project**
  - 20,000 gross square feet of occupied or conditioned space
- ▶ **Impacts**
  - State agencies
  - Universities
  - Community Colleges



UNC-Chapel Hill  
Carrington Hall Addition  
Architects: Pearce Brinkley Cease + Lee

- ▶ Measure and Verification during Post-Occupancy
  - /// Measured use no more than 15% of modeled use

## Contained in Part 3 of SB668: **Utility Savings Initiative (USI)**

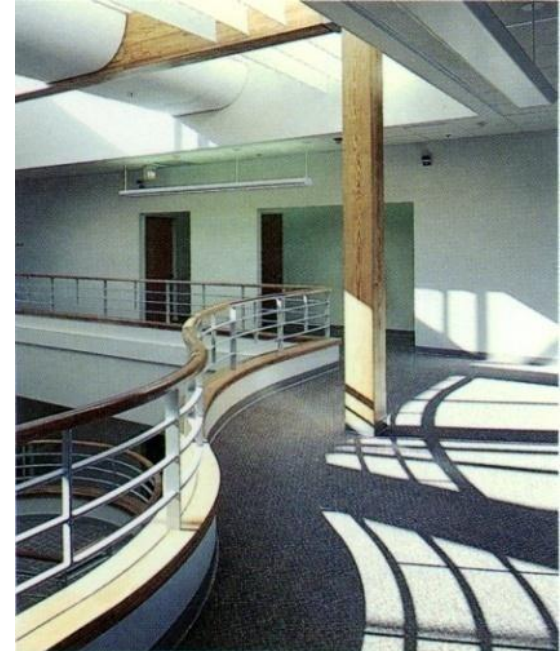
- ▶ Designed to help public entities reduce their energy and water use.
- ▶ Look for the EFFICIENCIES first
- ▶ Implementation of Energy Saving Measures (ESM's)
- ▶ Requires Strategic Energy Plan be on file with SEO and updated annually
- ▶ Requires annual report of energy and water consumption

Using today's technologies, design teams need to discover how to integrate and optimize building performance within available budgets rather than designing "as usual" and incrementally making the building more efficient....

The latter nearly always costs more.

Greg Franta, FAIA, Senior Vice President, Rocky Mountain Institute at Inaugural Annual Meeting of the Corporate Eco Forum in San Francisco

Way Station - Frederick, MD  
ENSAR Group



# Integrated Design

## ▶ What Is INTEGRATED DESIGN?

- Integrated team approach – **COLLABORATION**
- **Project delivery approach that uses the best skills and knowledge of all the stakeholders**
- Encourage and promote multi-lateral sharing
- **Team members are involved in the process**
- Risks are collectively managed and appropriately shared
- **Team success is tied to project success**

# Integrated Design

## ▶ Key Principles of Integrated Design

- Collaboration and Team Approach
- Communication
- Informed decision making earlier
- Trust and Mutual Respect
- Value-based decision making vs first cost

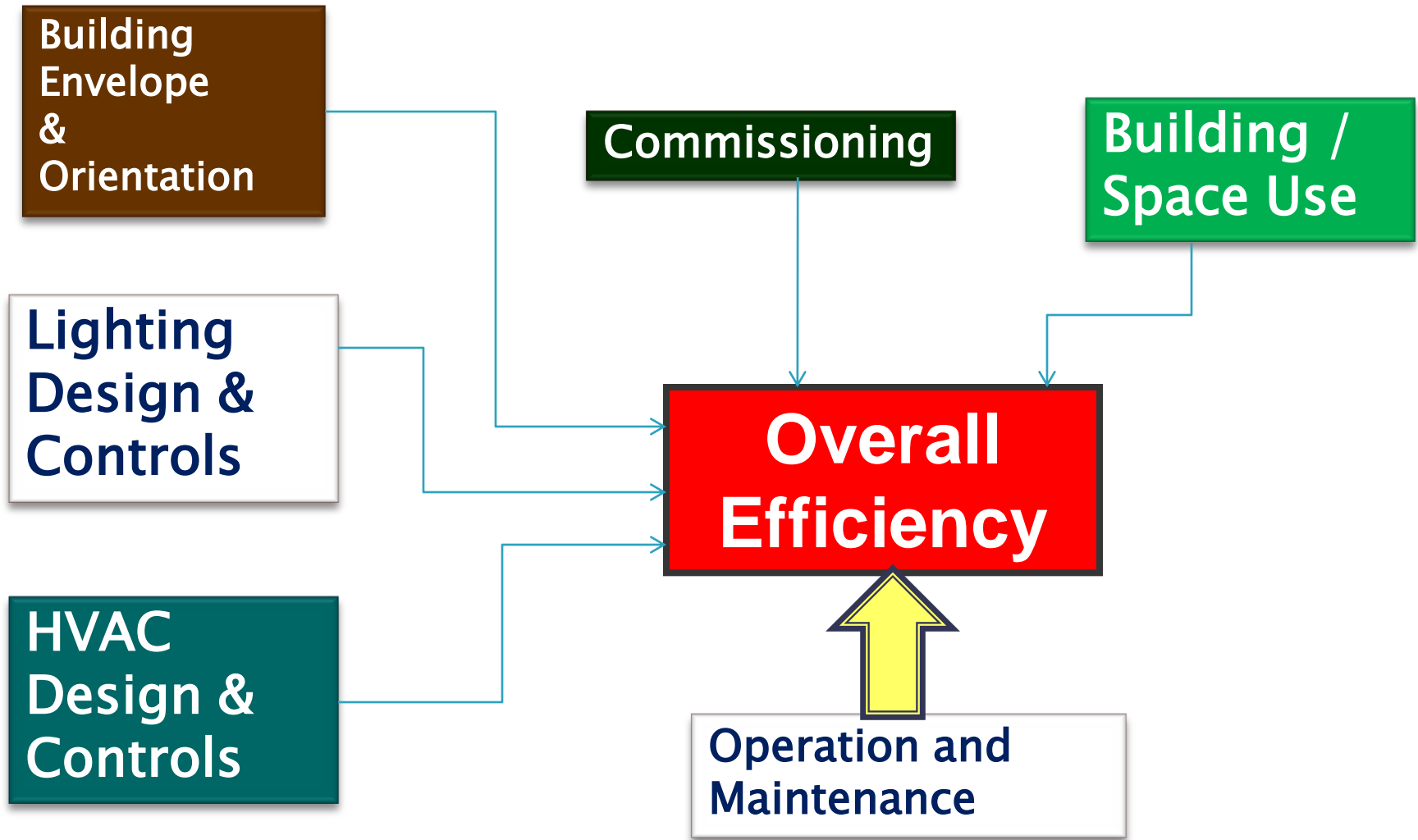


# Integrated Design

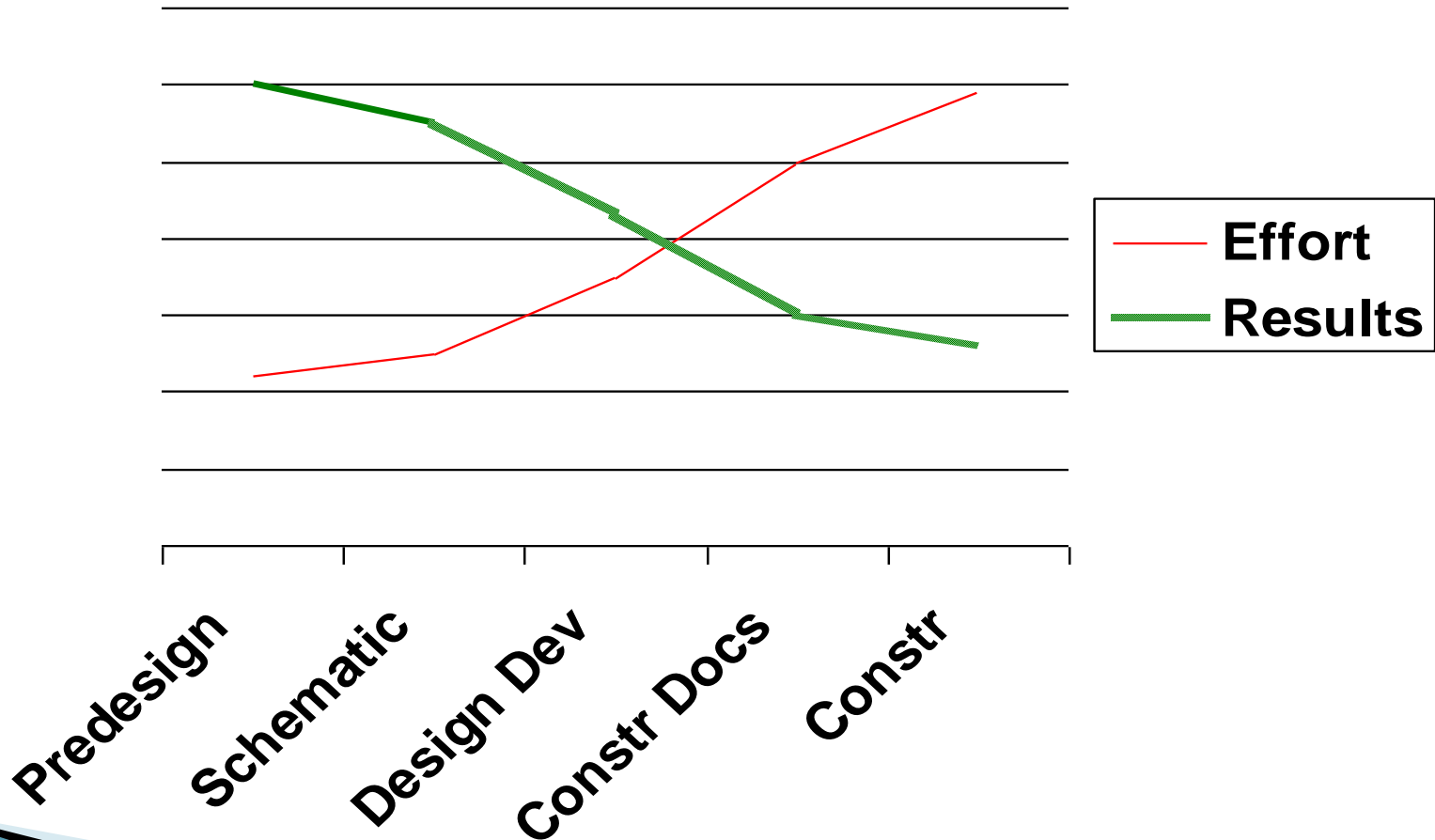
- ▶ Project Team Categories
  - **Primary Participants**
    - Substantial Involvement and Responsibility throughout project
  - **Key Supporting Participants**
    - Serve vital, but more discrete roles
  - **More Fluid in Integrated Design Approach**



# What Affects Building Efficiency?



## Start Early for Best Results





# THE END

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