

# ASHRAE/IESNA Standard 90.1-1999

## *Introduction and Overview of Standard 90.1-1999*

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# Historical Perspective

- 90 –1975 (first standard)
- 90A-1980 (past)
- 90.1–1989 (recent)
- 90.1–1999 (future)



# U.S. Energy Policy Act 1992

- 90.1 equipment efficiencies = new **manufacturing** minimum
- States to meet or exceed 90.1-1989
- Government to evaluate revisions to 90.1
  - May obligate states to upgrade codes



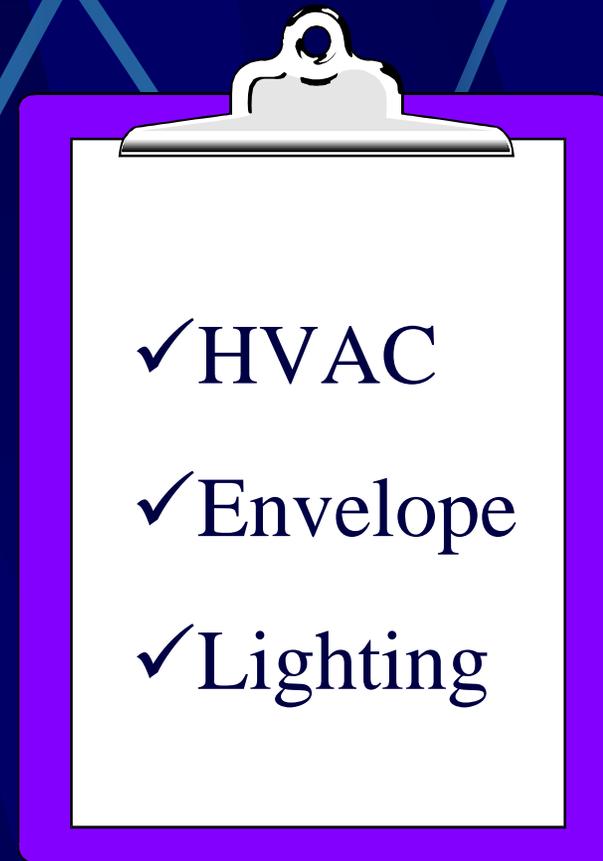
# Summary of What's New

- Extended scope and coverage (alterations and additions)
- Clearer, more enforceable requirements
- International units
- Expanded climate locations
- Simplified paths for compliance
- Reorganized for ease of use



# Simplicity of Standard 90.1

- Simplified Approach Option for HVAC
- One envelope table for a climate location
- One page Lighting requirements



# Section 1 - Purpose

- ...provide minimum requirements for the energy-efficient design of buildings except low-rise residential buildings

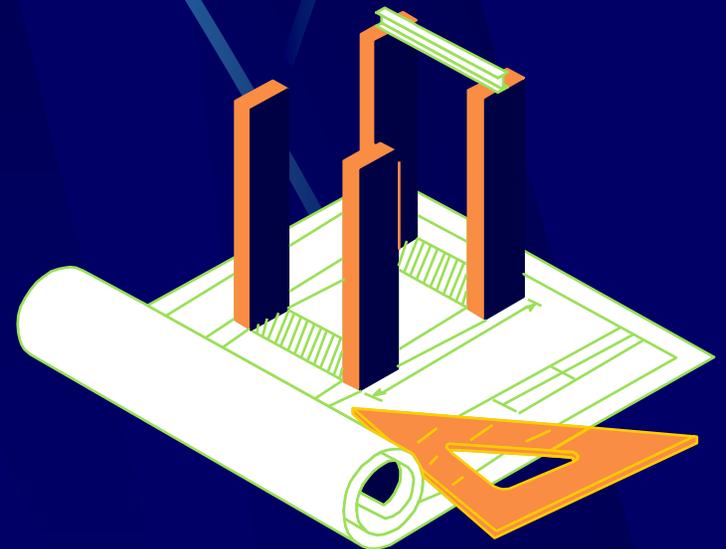


# Section 2 - Scope

- New buildings and systems
- New *portions* of buildings and systems (*additions*)
- New systems and equipment in *existing* buildings (*alterations*)
- Excludes low-rise residential - (Standard 90.2)

# Section 3 - Definitions

- Definitions
- Abbreviations
- Acronyms



# Section 4 - Admin. & Enforcement

- Compliance requirements
  - new buildings and systems
  - existing buildings and systems
    - additions
    - alterations (comply if you change it)
- Compliance documentation
  - drawings, manuals
  - labeling - envelope, mechanical



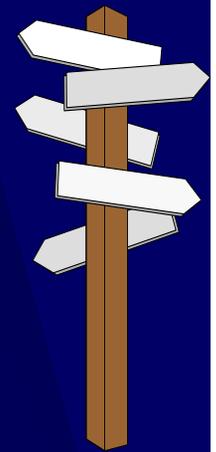
# Comparison of Organization of Sections of Standard 90.1

## 90.1-1989

- 4 – Compliance
- 5 – Electric power
- 6 – Lighting
- 7 – Auxiliary systems and equipment
- 8 – Building Envelope
- 9 – HVAC Systems
- 10 – HVAC Equipment
- 11 – SWH
- 12 – Energy management
- 13 - ECB

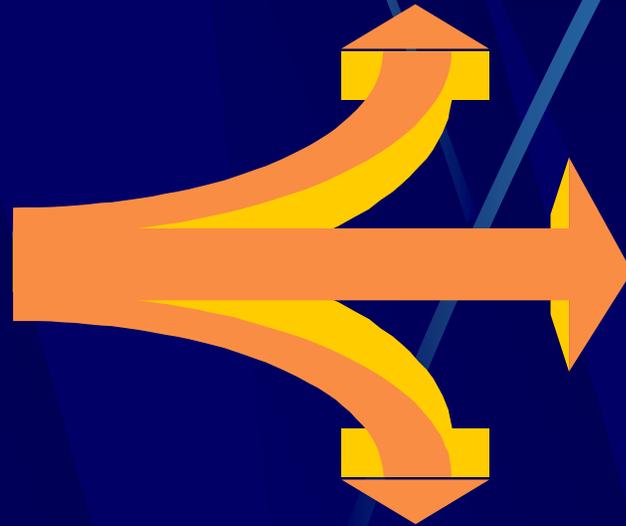
## 90.1-1999

- 4 – Administration and enforcement
- 5 – Building envelope
- 6 – HVAC
- 7 – SWH
- 8 – Power
- 9 – Lighting
- 10 – Other equipment
- 11 - ECB



# Compliance with Standard 90.1

Mandatory Requirements



+

Prescriptive Requirements, or

+

Performance Methodology

# Energy Cost Budget

- Whole-building performance approach
- Allows tradeoffs between building functions
- Limits allowable energy costs of the design to those of a building meeting the standard



# This is a Consensus Standard!

- Many years in the making
- A full and open process
- A broad, balanced committee (72 members)
- Three public reviews
- Over 80,000 public comments
- Overwhelming consensus vote to publish