

PREPARE Building Systems – Topic Summary: Updated on August 20, 2010

Chapter 00 – (Pages 1-23): Introduction / ARE – Building Systems Overview

Chapter 01 – (Pages 24-109): Plumbing Systems

- Code Review – Definitions & Diagrams
- Site & Storm Water Management
- Water Quality
- Water Sources
- Accessibility
- Water Distribution
- Drainage, Waste, Vent (DWV)
- Recycling
- Standards Agencies

Chapter 02 – (Pages 110-292): HVAC Systems

(Pages 111-166): Part 1 – Mechanical & Environmental

- Code Definitions & Diagrams
- Standards Agencies
- Environmental Issues

(Pages 167-192): Part 2 – Thermal Comfort

- Definitions & Diagrams
- Heat Transfer
- Comfort Zone
- Passive Strategies
- Psychrometrics
- Indoor Air Quality (IAQ)

(Pages 193-240): Part 3 – Thermal Control

- Sun & Shading
- Heat Flow
- Materials & Assemblies
- Passive Heating & Cooling
- Daylighting
- Cost Analysis

(Pages 241-259): Part 4 – Heating & Cooling for Smaller Buildings

- Equipment & Distribution
- Refrigeration Cycles
- Cooling-Only Systems
- Heating-Only Systems
- Heating & Cooling Systems

(Pages 260-292): Part 5 – Heating & Cooling for Large Buildings

- HVAC & Building Organization
- HVAC Systems
- Central Equipment
- Air Distribution
- Heat Recovery

Chapter 03 – (Pages 293-352): Electrical

- Definitions & Diagrams
- Electrical Principles
- Power & Energy
- Electric Demand
- Service Connection
- Transformers
- Switches
- Circuit Protection
- Switchgear & Panelboards
- Motors
- Wiring Devices
- Power Conditioning & Surge Protection
- Emergency & Standby Power
- Lightning Protection
- Photovoltaics

Chapter 04 – (Pages 353-392): Natural & Artificial Lighting Systems

(Pages 353-368): Part 1 – Lighting

- Definitions & Diagrams
- The Eye & Sight
- Light Quantity
- Light Quality
- Color

(Pages 369-380): Part 2 –Lighting: Sources

- Light Sources
- Daylight
- Electric Light

(Pages 381-392): Part 3 – Lighting: Design & Control

- Lighting Design
- Lighting Control
- Applications

Chapter 05 – (Pages 393-492): Specialty Systems

(Pages 393-432): Acoustics

- Fundamentals
- Enclosed Spaces
- Noise Control
- Definitions

(Pages 433-439): Communication & Security

- Intrusion Detection
- Systems by Building Types

(Pages 440-461): Conveying Systems

- Codes & Standards
- Elevators
- Controls
- Horizontal Conveyors
- Vertical Conveyors
- Pneumatic Tubes
- Stairs & Walks

(Pages 462-492): Fire Detection & Suppression

- Code Review – Definitions & Diagrams
- Fire Resistance
- Smoke Management
- Fire Suppression
- Lightning Protection
- Detection & Alarm Systems