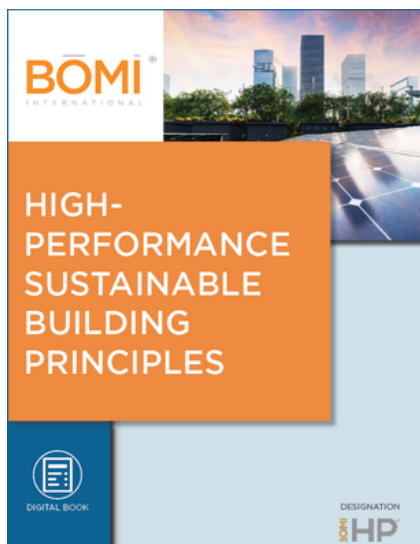


# BOMI

Building Owners and Managers Institute



## HIGH-PERFORMANCE SUSTAINABILITY BUILDING PRINCIPLES

BOMI's *High-Performance Sustainable Building Principles* course provides a comprehensive overview of buildings and exposes learners to the critical components of the sustainable ecosystem. As an industry professional, you will gain insight on how to meet the imperative for sustainable building initiatives, stay abreast of new trends in greening, and effectively communicate the value of pursuing sustainable building initiatives.

Upon successful completion of this course, learners will be able to:

- Understand and tackle building performance issues that impact local environmental issues and global climate change
- Integrate high performance building standards and guidelines
- Identify and overcome the hurdles to achieving true high-performance
- Attain top-to-bottom organizational buy-in for sustainable building initiatives

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### **Chapter 1: The Evolution and Impact of Sustainability**

- Introduction
- The Definition of High-Performance and Sustainability
- The Evolution of Sustainability
- Sustainability's Impact on Society
- Why Sustainability Matters Now
- High-Performance and Sustainability Matter to Businesses
- High-Performance and Sustainability Matter to Commercial Real Estate
- Resistance to Sustainability Strategies
- Embracing High-Performance and Sustainability
- Summary

### **Chapter 2: High-Performance Buildings and Market Dynamics**

- Introduction
- What Defines a High-Performance Building?
- High-Performance Building Characteristics
- High-Performance Building Market Dynamics
- Key Interrelated High-Performance Market Drivers
- Technology Advances—Information and Communications Technology
- Policy and Disclosure Requirements
- Funding Opportunities for High Performance
- Social Factors
- High-Performance Building Certifications and Standards
- Summary

### **Chapter 3: High-Performance Building Energy Usage and Management**

- Introduction
- Natural Resources
- Energy Consumption in Buildings
- Energy Management
- The Increase of Electricity Energy Consumption
- The Origins and Evolution of the Electric Grid
- Wholesale Electricity Energy Sales
- The Decentralization and Consumerization of Power Systems
- The Economics of Electric Power
- Summary

#### **Chapter 4: Sustainable Benchmarking and Standards for Design**

- Introduction
- Benchmarking Fundamentals
- Sustainable Energy Benchmarking Tools
- Industry Trends and Energy Benchmarking Drivers
- Overview of Federal, State, and Local Benchmarking Requirements
- Overview of International Benchmarking Requirements
- Imperatives for Sustainable Design Standards
- High-Performance and Sustainability Standards for Design and Operations
- International Standards for Design
- US Policies and Sustainable Design Standards
- US Public and Private Organizations
- Summary

#### **Chapter 5: IEQ and Resource Management in High-Performance Buildings**

- Introduction
- Indoor Environmental Quality and Sustainability
- Sustainable Resource Management
- Summary

#### **Chapter 6: High-Performance Exterior Building Systems**

- Introduction
- High-Performance Building Envelopes
- Building Envelope Components and Purpose
- Common Building Envelope Elements
- Roofing Design for High-Performance Operations
- High-Performance Waterproofing of Building Facades, Roofs, and Interiors
- Strategies for Achieving High-Performance and Sustainable Goals
- Waterproofing Strategies
- Summary

#### **Chapter 7: High-Performance Internal Building Systems**

- Introduction
- Building System Contributions to High-Performance Operations
- Building Systems and Commissioning
- Benchmarking Metrics for High-Performance System Operations
- Energy Use for Lighting
- Electrical System Efficiency in High-Performance Buildings
- Electricity Efficiency Control Systems
- Integrated Building Management Systems
- Resolving Integrated System Comfort Issues
- Stakeholder Engagement
- Summary

**Chapter 8: Water and Wastewater Systems in High-Performance Buildings**

- Introduction
- The Nature, Economics, and Regulation of Water
- Water Conservation for High-Performance Buildings
- Opportunities for High-Performance in Conventional Water Systems
- Efficiencies through Preventive Maintenance and Equipment Selection
- Opportunities for High-Performance in Alternative Water Systems
- Water Management Plans for High-Performance Buildings
- Educating Stakeholders to Increase Engagement
- Summary

**Chapter 9: Sustainable Renovation and Tenant Improvement Projects**

- Introduction
- The Building Renovation and Reuse Imperative
- Sustainability for Tenant Improvement Projects
- Evaluating the Functionality of Design Layouts
- Revisiting the Typical Construction Supply Chain
- Sustainable Renovation Lifecycle Best Practices
- Summary

**Chapter 10: Sustainable Operating Plans for High-Performance Buildings**

- Introduction
- The Sustainable Operating Plan Difference
- Indoor Air Quality and Sustainable Operating Plans
- Occupant Comfort, Welfare, Productivity, and Operational Planning
- Balancing Building Operations and Environmental Impact
- Weighing Occupant Needs against Environmental Concerns
- Summary

**Chapter 11: Transportation Alternatives to the Single-Occupant Vehicle**

- Introduction
- Transportation Alternatives and Requirements
- Benefits of Transportation Alternatives
- Summary

**Chapter 12: Influencing Behavior and Culture for Sustainability Engagement**

- Introduction
- Influencing Decision Making through Behavioral Economics
- Changing Corporate Culture
- Summary

**Chapter 13: Sustainable Goods Purchasing and Plans for High-Performance Buildings**

- Introduction
- Sustainable Goods Purchasing
- Third-Party Certifications to Evaluate Sustainable Goods
- Types of Sustainable Goods
- The Life Cycle of Sustainable Goods
- Components of a Sustainable Goods Purchasing Plan
- Summary

**Chapter 14: Financing Sustainability Projects in the Built Environment**

- Introduction
- Integrated Team Approach to Sustainable Building Projects
- Sustainable Building Project: Incentive and Rebate Financing
- Sustainable Building Project: Validation
- Portfolio Planning and Sustainability Projects
- Summary

**Chapter 15: Action Plan for High-Performance Sustainable Building Principles**

- Chapter 1 Action Plan: Prioritize Your Initiatives
- Chapter 2 Action Plan: Leverage Your Strengths
- Chapter 3 Action Plan: Mitigate High Energy Use
- Chapter 4 Action Plan: Select Which Design Standards to Use
- Chapter 5 Action Plan: Identify Sustainable Purchasing Options
- Chapter 6 Action Plan: Maximize Building Envelope Performance
- Chapter 7 Action Plan: Measure Internal Building Systems Performance
- Chapter 8 Action Plan: Reduce Water Consumption
- Chapter 9 Action Plan: Develop a Tenant Improvement Plan
- Chapter 10 Action Plan: Refine Procedures or Replace Equipment
- Chapter 11 Action Plan: Assess Transportation Alternatives
- Chapter 12 Action Plan: Drive Cultural Change and Engage Stakeholders
- Chapter 13 Action Plan: Build a Sustainable Purchasing Plan
- Chapter 14 Action Plan: Construct a Business Case