Integrative Process (IP) Referenced Standards

- IPp Integrated Project Planning and Design (healthcare only)
 - None
- IPc Integrative Process
 - ANSI Consensus National Standard Guide© 2.0 for Design and Construction of Sustainable Buildings and Communities



Location and Transportation (LT) Referenced Standards

- LTc LEED for Neighborhood Development Location
 - None
- LTc Sensitive Land Protection
 - U.S. Department of Agriculture, U.S. Code of Federal Regulations Title 7, Volume 6, Parts 400 to 699, Section 657.5
 - FEMA Flood Zone Designations
 - U.S. Fish and Wildlife Service, List of Threatened and Endangered Species
 - NatureServe Heritage Program, GH, G1, and G2 species and ecological communities
- LTc High Priority Site
 - U.S. Environmental Protection Agency, National Priority List
 - U.S. Housing and Urban Development, Federal Empowerment Zone, Federal Enterprise Community, and Federal Renewal Community
 - U.S. Department of Treasury, Community Development Financial Institutions Fund
 - U.S. Department of Housing and Urban Development, Qualified Census Tracts and Difficult Development Areas
- LTc Surrounding Density and Diverse Uses
 - None
- LTc Access to Quality Transit
 - None
- LTc Bicycle Facilities
 - None
- LTc Reduced Parking Footprint
 - Institute of Transportation Engineers, Transportation Planning Handbook, 3rd edition,
 Tables 18-2 through 18-4
- LTc Green Vehicles
 - American Council for an Energy Efficient Economy (ACEEE) Green Book
 - Society of Automotive Engineers, SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler
 - International Electrotechnical Commission 62196



Sustainable Sites (SS) Chapter Referenced Standards

- SSp Construction Activity Pollution Prevention
 - 2003 EPA Construction General Permit
- SSp Environmental Site Assessment (Schools and Healthcare only)
 - ASTM E1527—05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
 - ASTM E1903—11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process
 - 40 CFR Part 312: Standards and Practice for All Appropriate Inquiries; Final Rule

SSc Site Assessment

- ASTM E1527—05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
- ASTM E1903—11 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process
- 40 CFR Part 312: Standards and Practice for All Appropriate Inquiries; Final Rule
- Natural Resources Conservation Service, web soil survey
- TR-55 initial water storage capacity
- SSc Site Development Protect or Restore Habitat
 - U.S. EPA ecoregions
 - Land Trust Alliance accreditation
 - Natural Resources Conservation Service, web soil survey
 - Sustainable Sites Initiative
- SSc Open Space
 - None
- SSc Rainwater Management
 - U.S. EPA Technical Guidance on Implementing the Rainwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act
- SSc Heat Island Reduction
 - ASTM Standards E903 and E892
 - Cool Roof Rating Council Standard (CRRC-1)
- SSc Light Pollution Reduction
 - Illuminating Engineering Society and International Dark Sky Association (IES/IDA) Model Lighting Ordinance User Guide and IES TM-15-11, Addendum A



- SSc Site Master Plan (Schools only)
 - None
- SSc Tenant Design and Construction Guidelines (Core and Shell only)
 - None
- SSc Places of Respite (Healthcare only)
 - 2010 FGI Guidelines for Design and Construction of Health Care Facilities
- SSc Direct Exterior Access (Healthcare only)
 - None
- SSc Joint Use of Facilities (Schools only)
 - None



Water Efficiency (WE) Referenced Standards

- WEp Outdoor Water Use Reduction
 - None
- WEp Indoor Water Use Reduction
 - Energy Policy Act (EPAct) of 1992 and as amended
 - EPAct 2005
 - International Association of Plumbing and Mechanical Officials Publication IAPMO / ANSI UPC 1-2006, Uniform Plumbing Code 2006, Section 402.0, Water-Conserving Fixtures and Fittings
 - International Code Council, International Plumbing Code 2006, Section 604, Design of Building Water Distribution System
 - ENERGY STAR
 - Consortium for Energy Efficiency
 - IgCC/ASHRAE 189.1
- WEp Building-level Water Metering
 - None
- WEc Outdoor Water Use Reduction
 - None
- WEc Indoor Water Use Reduction
 - Energy Policy Act (EPAct) of 1992 and as amended
 - EPAct 2005
 - International Association of Plumbing and Mechanical Officials Publication IAPMO / ANSI UPC 1-2006, Uniform Plumbing Code 2006, Section 402.0, Water-Conserving Fixtures and Fittings
 - International Code Council, International Plumbing Code 2006, Section 604, Design of Building Water Distribution System
 - ENERGY STAR
 - Consortium for Energy Efficiency
 - Energy Policy Act (EPAct) of 1992 and as amended
 - IgCC/ASHRAE 189.1
- WEc Cooling Tower Water Use
 - None
- WEc Water Metering
 - None



Energy and Atmosphere (EA) Referenced Standards

- EAp Fundamental Commissioning and Verification
 - ASHRAE Guideline 0–2005, The Commissioning Process
 - ASHRAE Guideline 1.1–2007, HVAC&R Technical Requirements for the Commissioning Process
 - NIBS Guideline 3–2012, Exterior Enclosure Technical Requirements for the Commissioning Process

• EAp Minimum Energy Performance

- ASHRAE 90.1–2010
- ASHRAE 50% Advanced Energy Design Guides
- Advanced Buildings Core Performance Guide
- COMNET Commercial Buildings Energy Modeling Guidelines

• EAp Building-level Energy Metering

- American National Standards Institute, ANSI C12.20, Class 0.2 (±0.2)
- American National Standards Institute, ANSI B109
- EN Standard, EN-1434:Thermal energy (Btu meter or heat meter)

· EAp Fundamental Refrigerant Management

• U.S. EPA Clean Air Act, Title VI, Section 608, Refrigerant Recycling Rule

• EAc Enhanced Commissioning

- ASHRAE Guideline 0–2005, The Commissioning Process
- ASHRAE Guideline 1.1–2007, HVAC&R Technical Requirements for the Commissioning Process
- NIBS Guideline 3–2012, Exterior Enclosure Technical Requirements for the Commissioning Process

• EAc Optimize Energy Performance

- ASHRAE 90.1–2010
- ASHRAE 50% Advanced Energy Design Guides
- COMNET Commercial Buildings Energy Modeling Guidelines

EAc Advanced Energy Metering

- None
- EAc Demand Response
 - None

EAc Renewable Energy Production

- Center for Resource Solutions Green-e Program
- Commercial Building Energy Consumption Survey (CBECS)



- EAc Enhanced Refrigerant Management
 - None
- EAc Green Power and Carbon Offsets
 - Green-e Energy and Green-e Climate
 - Commercial Building Energy Consumption Survey (CBECS)
 - Building Owners and Managers Association (BOMA)
 - ENERGY STAR Portfolio Manager: Methodology for Greenhouse Gas Inventory and Tracking Calculations
 - Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2010. Annex 2 Methodology and Data for Estimating CO2 Emissions from Fossil Fuel Combustion
 - 2006 IPCC Guidelines for National Greenhouse Gas Inventories
 - eGRID2012 Version 1.0—U.S. Environmental Protection Agency
 - WRI-WBCSD Greenhouse Gas Protocol



Materials and Resources (MR) Referenced Standards

- MRp Storage and Collection of Recyclables
 - None

• MRp Construction and Demolition Waste Management Planning

- European Commission Waste Framework Directive 2008/98/EC
- European Commission Waste Incineration Directive 2000/76/EC
- EN 303-1—1999/A1—2003, Heating boilers with forced draught burners, Terminology, general requirements, testing and marking
- EN 303-2—1998/A1—2003, Heating boilers with forced draught burners, Special requirements for boilers with atomizing oil burners
- EN 303-3—1998/AC—2006, Gas-fired central heating boilers, Assembly comprising a boiler body and a forced draught burner
- EN 303-4—1999, Heating boilers with forced draught burners, Special requirements for boilers with forced draught oil burners with outputs up to 70 kW and a maximum operating pressure of 3 bar, Terminology, special requirements, testing and marking
- EN 303-5—2012, Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW
- EN 303-6—2000, Heating boilers with forced draught burners, Specific requirements for the domestic hot water operation of combination boilers with atomizing oil burners of nominal heat input not exceeding 70 kW
- EN 303-7—2006, Gas-fired central heating boilers equipped with a forced draught burner of nominal heat output not exceeding 1000 kW

• MRp PBT Source Reduction--Mercury (Healthcare only)

- Guidelines for the Design and Construction of Health Care Facilities, 2010 Edition
- ISO-11143, Dentistry, Amalgam Separators
- ENERGY STAR
- U.S. Department of Energy ENERGY STAR Qualified Light Bulbs, 2009 Partner Resource Guide
- Toxicological Effects of Methylmercury

• MRc Building Life cycle Impact Reduction

- ISO 14044–2006, Environmental management, Life cycle assessment requirements, and guidelines
- National Register of Historic Places
- Secretary of Interior's Standards for the Treatment of Historic Properties



MRc Building Product Disclosure and Optimization - Environmental Product Declarations

- ISO 14021–1999, Environmental labels and declarations—Self Declared Claims (Type II Environmental Labeling)
- ISO 14025–2006, Environmental labels and declarations (Type III Environmental Declarations—Principles and Procedures)
- ISO 14040–2006, Environmental management, Life cycle assessment principles, and frameworks
- ISO 14044–2006, Environmental management, Life cycle assessment requirements, and guidelines
- EN 15804—2012 Sustainability of construction works, Environmental product declarations, Core rules for the product category of construction products
- ISO 21930–2007 Sustainability in building construction—Environmental declaration of building products
- Guides for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e)
- MRc Building Product Disclosure and Optimization Sourcing of Raw Materials
 - Global Reporting Initiative (GRI) Sustainability Report
 - Organization for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises
 - U.N. Global Compact, Communication of Progress
 - ISO 26000—2010 Guidance on Social Responsibility
 - Forest Stewardship Council
 - Sustainable Agriculture Network
 - The Rainforest Alliance
 - ASTM Test Method D6866
 - ISO 14021–1999, Environmental labels and declarations—Self Declared Claims (Type II Environmental Labeling)
- MRc Building Product Disclosure and Optimization Material Ingredients
 - Chemical Abstracts Service
 - Health Product Declaration
 - Cradle-to-Cradle® Certified Products Program
 - Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
 - GreenScreen



• MRc Construction and Demolition Waste Management

- Certification of Sustainable Recyclers
- European Commission Waste Framework Directive 2008/98/EC
- European Commission Waste Incineration Directive 2000/76/EC
- EN 303-1—1999/A1—2003, Heating boilers with forced draught burners, Terminology, general requirements, testing and marking
- EN 303-2—1998/A1—2003, Heating boilers with forced draught burners, Special requirements for boilers with atomizing oil burners
- EN 303-3—1998/AC—2006, Gas-fired central heating boilers, Assembly comprising a boiler body and a forced draught burner
- EN 303-4—1999, Heating boilers with forced draught burners, Special requirements for boilers with forced draught oil burners with outputs up to 70 kW and a maximum operating pressure of 3 bar, Terminology, special requirements, testing and marking
- EN 303-5—2012, Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW
- EN 303-6—2000, Heating boilers with forced draught burners, Specific requirements for the domestic hot water operation of combination boilers with atomizing oil burners of nominal heat input not exceeding 70 kW
- EN 303-7—2006, Gas-fired central heating boilers equipped with a forced draught burner of nominal heat output not exceeding 1000 kW
- MRc PBT Source Reduction--Mercury (Healthcare only)
 - none
- MRc PBT Source Reduction--Lead, Cadmium & Copper (Healthcare only)
 - ASTM B813 for copper flux
 - ASTM B828, Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings
 - California AB1953 standard for lead water pipes used to convey water for human consumption
 - GreenSeal
 - 2002 National Electric Code requirements for removal and disposal of disconnected wires with lead stabilizers



• MRc Furniture and Medical Furnishings (Healthcare only)

- Restriction of the Use of Certain Hazardous Substances of the European Union Directive (EU RoHS)
- ANSI/BIFMA M7.1-2011
- ANSI/BIFMA e3–2011
- ISO 14025–2006, Environmental labels and declarations (Type III Environmental Declarations—Principles and Procedures)
- ISO 14040–2006, Environmental management, Life cycle assessment principles, and frameworks
- ISO 14044–2006, Environmental management, Life cycle assessment requirements, and guidelines
- ISO 21930–2007 Sustainability in building construction—Environmental declaration of building products
- ISO 14021–1999, Environmental labels and declarations—Self Declared Claims (Type II Environmental Labeling)
- MRc Design for Flexibility (Healthcare only)
 - None



Indoor Environmental Quality (EQ) Referenced Standards

- EQp Minimum Indoor Air Quality Performance
 - ASHRAE Standard 62.1–2010: Ventilation for Acceptable Indoor Air Quality
 - Comité Européen de Normalisation (CEN) Standard EN 15251–2007:Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics
 - Comité Européen de Normalisation (CEN) Standard EN 13779–2007: Ventilation for nonresidential buildings, Performance requirements for ventilation and room conditioning systems
 - Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10, March 2005, Natural Ventilation in Nondomestic Buildings
 - ASHRAE Standard 170–2008: Ventilation of Health Care Facilities
 - 2010 FGI Guidelines for Design and Construction of Health Care Facilities

EQp Environmental tobacco smoke control

- Standard Test Method for Determining Air LeakageRate by Fan Pressurization, ASTM E779-03: Indoor Air Quality
- Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door, ASTM E1827-11
- Nondestructive testing, Leak testing—Criteria for method and technique selection, CEN Standard EN 1779—1999
- Nondestructive testing, Leak testing, Tracer gas method, CEN Standard EN 13185— 2001
- Nondestructive testing, Leak testing, Calibration of reference leaks for gases, CEN Standard EN 13192—2001
- RESNET Standards
- ENERGY STAR Multifamily Testing Protocol

• EQp Minimum Acoustic Performance (Schools only)

- AHRI Standard 885–2008, Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets
- American National Standards Institute (ANSI)/ASHRAE Standard S12.60–2010, Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools
- 2011 HVAC Applications, ASHRAE Handbook, Chapter 48, Noise and Vibration Control
- NRC-CNRC Construction Technology Update No. 51, Acoustic Design of Rooms for Speech, 2002t



• EQc Enhanced Indoor Air Quality Strategies

- ASHRAE Standard 52.2–2007
- CEN Standard EN 779–2002
- Chartered Institution of Building Services Engineers (CIBSE) Applications Manual AM10, March 2005, Natural Ventilation in Nondomestic Buildings
- Chartered Institution of Building Services Engineers (CIBSE) Applications Manual 13, 2000
- National Ambient Air Quality Standards (NAAQS)

EQc Low-Emitting materials

- California Department of Public Health (CDPH) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, v. 1.1–2010
- ISO 17025
- ISO Guide 65
- German AgBB Testing and Evaluation Scheme (2010)
- ISO 16000-3:2011- Indoor air -- Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air -- Active sampling method
- ISO 16000-6:2011- Indoor air -- Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS or MS-FID
- ISO 16000-7:2007- Indoor air -- Part 7: Sampling strategy for determination of airborne asbestos fibre concentrations
- ISO 16000-11:2006- Indoor air -- Part 11: Determination of the emission of volatile organic compounds from building products and furnishing -- Sampling, storage of samples and preparation of test specimens
- South Coast Air Quality Management District (SCAQMD) Rule 1168
- South Coast Air Quality Management District (SCAQMD) Rule 1113
- European Decopaint Directive
- Canadian VOC Concentration Limits for Architectural Coatings
- Hong Kong Air Pollution Control Regulation
- California Air Resources Board (CARB) 93120 Airborne Toxic Control Measure (ATCM) for formaldehyde emissions from composite wood products
- ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions from Office Furniture Systems, Components and Seating
- ANSI/BIFMA e3–2011 Furniture Sustainability Standard



- NIOSH, Asphalt Fume Exposures During the Application of Hot Asphalt to Roofs, Publication No. 2003-112
- ISO 4224 Ambient air—Determination of carbon monoxide—Nondispersive infrared spectrometric method
- ISO 7708 Air quality—Particle size fraction definitions for health-related sampling
- ISO 13964 Air quality—Determination of ozone in ambient air—Ultraviolet photometric method
- U.S. EPA Compendium of Methods for the Determination of Air Pollutants in Indoor Air, IP-1: Volatile Organic Compounds, IP-3: Carbon Monoxide and Carbon Dioxide, IP-6: Formaldehyde and other aldehydes/ketones, IP-10 Volatile Organic Compounds
- U.S. EPA Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air, TO-1: Volatile Organic Compounds, TO-11: Formaldehyde, TO-15: Volatile Organic Compounds, TO-17: Volatile Organic Compounds
- ASTM D5197–09e1 Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)
- ASTM D5149–02(2008) Standard Test Method for Ozone in the Atmosphere: Continuous Measurement by Ethylene Chemiluminescence

• EQc Indoor Air Quality Assessment

- ASTM D5197–09e1 Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology)
- ISO 16000-3:2011- Indoor air -- Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and test chamber air -- Active sampling method
- ISO 16000-6:2011- Indoor air -- Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS or MS-FID
- ASTM D5149–02(2008) Standard Test Method for Ozone in the Atmosphere: Continuous Measurement by Ethylene Chemiluminescence
- ISO 4224 Ambient air—Determination of carbon monoxide—Nondispersive infrared spectrometric method
- ISO 7708 Air quality—Particle size fraction definitions for health-related sampling
- ISO 13964 Air quality—Determination of ozone in ambient air—Ultraviolet photometric method
- U.S. EPA Compendium of Methods for the Determination of Air Pollutants in Indoor Air, IP-1: Volatile Organic Compounds, IP-3: Carbon Monoxide and Carbon Dioxide, IP-6: Formaldehyde and other aldehydes/ketones, IP-10 Volatile Organic Compounds
- U.S. EPA Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air, TO-1: Volatile Organic Compounds, TO-11: Formaldehyde, TO-15: Volatile Organic Compounds, TO-17: Volatile Organic Compounds



 California Department of Public Health (CDPH) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, v. 1.1–2010

• EQc Thermal Comfort

- 2011 HVAC Applications, ASHRAE Handbook, Chapter 48, Noise and Vibration Control
- Comité Européen de Normalisation (CEN) Standard EN 15251–2007:Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics
- ASHRAE Standard 55–2010, Thermal Environmental Conditions for Human Occupancy
- The Lighting Handbook, 10th edition, Illuminating Engineering Society of North America
- IES Lighting Measurements (LM) 83-12, Approved Method: IES Spatial Daylight Autonomy (sDA) and Annual Sunlight Exposure (ASE)
- Windows and Offices: A Study of Office Worker Performance and the Indoor Environment
- ANSI S1.4, Performance Measurement Protocols for Commercial Buildings
- 2010 Noise and Vibration Guidelines for Health Care Facilities

EQc Interior Lighting

- The Lighting Handbook, 10th edition, Illuminating Engineering Society of North America
- IES Lighting Measurements (LM) 83-12, Approved Method: IES Spatial Daylight Autonomy (sDA) and Annual Sunlight Exposure (ASE)
- Windows and Offices: A Study of Office Worker Performance and the Indoor Environment
- ANSI S1.4, Performance Measurement Protocols for Commercial Buildings
- 2010 Noise and Vibration Guidelines for Health Care Facilities

EQc Daylight

- IES Lighting Measurements (LM) 83-12, Approved Method: IES Spatial Daylight Autonomy (sDA) and Annual Sunlight Exposure (ASE)
- The Lighting Handbook, 10th edition, Illuminating Engineering Society of North America
- Windows and Offices: A Study of Office Worker Performance and the Indoor Environment
- ANSI S1.4, Performance Measurement Protocols for Commercial Buildings
- 2010 Noise and Vibration Guidelines for Health Care Facilities



• EQc Quality Views

- Windows and Offices: A Study of Office Worker Performance and the Indoor Environment
- ANSI S1.4, Performance Measurement Protocols for Commercial Buildings
- 2010 Noise and Vibration Guidelines for Health Care Facilities

• EQc Acoustic Performance

- 2011 HVAC Applications, ASHRAE Handbook, Chapter 48, Noise and Vibration Control
- AHRI Standard 885–2008, Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets
- 2010 Noise and Vibration Guidelines for Health Care Facilities
- American National Standards Institute (ANSI)/ASHRAE Standard S12.60–2010, Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools
- 2010 FGI Guidelines for Design and Construction of Health Care Facilities

