

SECTION 018114 SUSTAINABLE DESIGN REQUIREMENTS – LEED v4 BD+C

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General [and Supplementary] Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes general requirements and procedures for compliance with USGBC's LEED prerequisites and credits needed for Project to obtain LEED **Certified** certification based on USGBC's "LEED Version 4 for Building Design and Construction" (hereafter, LEED v4 BD+C).
 - 1. Specific requirements for LEED are also included in other Sections.
 - 2. Other LEED prerequisites and credits needed to obtain LEED certification depend on product selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
- C. Section 01 81 19 Indoor Air Quality Requirements
- D. Section 01 91 00 General Commissioning Requirements

1.3 DEFINITIONS

- A. BUG Rating: Classification system for luminaires defined in terms of backlight (B), uplight (U), and glare (G).
- B. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001. Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body.
- C. Cradle-to-Gate Assessment: Analysis of a product's partial life-cycle from extraction (cradle) to gate (factory completion prior to distribution).
- D. Embodied Carbon: Sum of all greenhouse gas emissions resulting from the construction lifecycle of a building. This includes emissions from material extraction and transportation, product development, transportation to the site and install, refurbishment (if applicable) and end of life through demolition and material disposal.
- E. LEED: USGBC's "LEED Version 4 for Building Design and Construction." Definitions that are part of this document apply to this Section.
- F. Life-Cycle Assessment: Evaluation of environmental impacts of a product from cradle to gate, defined by ISO 14040 and ISO 14044.
- G. Life-Cycle Inventory: Database that defines environmental input and output for each step in a material or assembly's life cycle.
- H. Recycled Content: The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

1. "Postconsumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
 2. "Preconsumer" material is defined as material diverted from the waste stream during the manufacturing process. Reutilization of materials (such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it) is excluded.
- I. Regional Materials: Materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles (160 km) of Project site. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.
- J. Environmental Product Declaration (EPD): An independently verified report based on life-cycle assessment studies that have been conducted according to a set of common rules for each product category and peer-review.
1. Product-Specific Declaration: A product with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that has at least a cradle to gate scope.
 2. Industry-Wide (Generic) EPD: Provide products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator. EPD must conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope.
 3. Product-Specific Type III EPD: A product with a third-party certification, including external verification, in which the manufacturer is explicitly recognized by the program operator. EPD must conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope.
- K. Solar Reflectance Index (SRI): The measure of a constructed surface's ability to stay cool in the sun by reflecting solar radiation and emitting thermal radiation. SRI values range from zero (solid black surface) to 100 (solid white surface). SRI value of a material is calculated according to ASTM E1980 and based on the aged tested values of solar reflectance and thermal emittance.
- L. Vertical Illuminance: Illuminance levels calculated at a point on a vertical service or plane.
- M. Health Product Declarations (HPD): A product with a publicly available, critically reviewed disclosure of the potential chemicals of concern in products by comparing product ingredients to a set of priority "hazard" lists based on the GreenScreen for Safer Chemicals and additional lists from other government agencies.
- 1.4 QUALITY ASSURANCE
- A. Sustainability Consultant: Engage an experienced LEED Accredited Professional to coordinate LEED requirements. Sustainability Consultant may also serve as waste management coordinator.
- 1.5 ACTION SUBMITTALS
- A. General: Submit sustainable design submittals required by other Sections.
- B. Sustainable design submittals are in addition to other submittals.
1. If submitted item is identical to that proposed to comply with other requirements, include additional copy with other submittal as a record of compliance with indicated LEED requirements instead of separate sustainable design submittal. Mark additional copy "Sustainable design submittal".

- C. Sustainable Design Documentation Submittals:
1. Documentation for luminaires indicating BUG ratings, lumens emitted, and vertical illuminance values.
 2. Documentation for compliant paving materials indicating the SRI, SR, and permeability.
 3. Documentation for compliant roofing materials indicating the SRI.
 4. Product Data and certification for WaterSense-labeled water fixtures.
 5. Product Data for plumbing fixtures indicating flush or flow rate.
 6. Documentation complying with Division 1 Section "General Commissioning Requirements," Division 1 Section "Exterior Enclosure Commissioning," Division 21 Section "Commissioning of Fire Suppression," Division 22 Section "Commissioning of Plumbing," Division 23 Section "Commissioning of HVAC," and Division 26 Section "Commissioning of Electrical Systems".
 7. Environmental Product Declarations (EPDs) complying with LEED requirements.

 8. Documentation for products that comply with LEED requirements for multi-attribute optimization.
 - a. Include documentation for regional materials, indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material and costs of regional materials.
 - b. Include documentation for any applicable third-party certifications.
 9. Documentation for products that comply with LEED requirements for leadership extraction practices. Include the following:
 - a. Product Data and certification letter from product manufacturers, indicating participation in an extended producer responsibility program and statement of costs.
 - b. Product Data and certification for bio-based materials, indicating that they comply with requirements. Include statement of costs.
 - c. Product Data and chain-of-custody certificates for products containing certified wood. Include invoices.
 - d. Receipts for salvaged and refurbished materials used for Project, indicating sources and costs.
 - e. Product Data and certification letter from product manufacturers, indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement of costs.
 - f. Documentation for regional materials, indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material and costs of regional materials.
 10. Material ingredient reports for products that comply with LEED requirements for material ingredient reporting.
 11. Documentation for products that comply with LEED requirements for material ingredient optimization.
 12. Documentation complying with Division 1 Section "Construction Waste Management and Disposal".
 13. Product Data for adhesives and sealants used inside weatherproofing system, indicating VOC content and laboratory test reports showing compliance with requirements for low-emitting materials.
 14. Product Data for paints and coatings used inside weatherproofing system, indicating VOC content and laboratory test reports showing compliance with requirements for low-emitting materials.
 15. Laboratory test reports for flooring, indicating compliance with requirements for low-emitting materials.
 16. Laboratory test reports for products containing composite wood or agrifiber products or wood glues, indicating compliance with requirements for low-emitting materials.
 17. Laboratory test reports for ceilings, walls, and thermal insulation, indicating compliance with requirements for low-emitting materials.
 18. Construction Indoor-Air-Quality (IAQ) Management:
 - a. Construction IAQ management plan.
 - b. Product Data for temporary filtration media.

- c. Product Data for filtration media used during occupancy.
- d. Construction Documentation: Six photographs at three different times during construction period, along with brief description of SMACNA approach employed, documenting implementation of IAQ management measures, including protection of ducts and on-site stored or installed absorptive materials.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Sustainability Consultant.
- B. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for the following categories of items:
 - 1. Plumbing.
 - 2. Mechanical.
 - 3. Electrical.
 - 4. Specialty items such as elevators and equipment.
- C. Sustainable Design Action Plans: Provide preliminary submittals within [seven] [14] [30] [60] <Insert number> days of date established for [commencement of the Work] [the Notice to Proceed] [the Notice of Award], indicating how the following requirements will be met:
 - 1. Waste management plan complying with Section 017419 "Construction Waste Management and Disposal."
 - 2. Construction IAQ management plan.
 - 3. List of proposed products complying with requirements for product manufacturer supply chain optimization.
- D. Sustainable Design Progress Reports: Concurrent with each Application for Payment, submit reports comparing actual construction and purchasing activities with sustainable design action plans.

1.7 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at [Project site] <Insert location>. Review LEED requirements and action plans for compliance with requirements.

1.8 ADMINISTRATIVE REQUIREMENTS

- A. Submit documentation to USGBC and respond to questions and requests from USGBC about its LEED prerequisites and credits that are Contractor's responsibility, that depend on product selection or product qualities, or that depend on Contractor's procedures, until USGBC has made its determination on Project's LEED certification application.
 - 1. Document correspondence with USGBC as informational submittals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Provide products and procedures necessary to obtain LEED credits indicated as Contractor's responsibility. Although other Sections may specify some requirements that contribute to these LEED credits, Contractor shall provide additional materials and procedures necessary to obtain LEED credits indicated.

- B. At least 10 different products from at least three different manufacturers shall have EPDs that comply with LEED requirements. Industrywide (generic) EPDs shall be valued as one-half of a product. Structural products shall comply with requirements for Embodied Carbon/LCA Optimization.
- C. At least 10 percent, by cost, OR 10 different products from three different manufacturers of permanently installed products for Project shall comply with LEED requirements for multi-attribute optimization.
- D. At least 40 percent, by cost, from at least five different manufacturers shall meet one of the responsible sourcing and extraction criteria.
- E. At least 10 different products from at least three different manufacturers shall comply with LEED requirements for material ingredient reporting.
- F. At least 10 percent, by cost, or 10 products from at least three different manufacturers of permanently installed products for Project shall comply with LEED requirements for material ingredient optimization.

2.2 LOW-EMITTING MATERIALS

- A. Paints and Coatings: For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
 - 1. Flat Paints and Coatings: 50 g/L.
 - 2. Nonflat Paints and Coatings: 50 g/L.
 - 3. Dry-Fog Coatings: 150 g/L.
 - 4. Primers, Sealers, and Undercoaters: 100 g/L.
 - 5. Rust-Preventive Coatings: 100 g/L.
 - 6. Zinc-Rich Industrial Maintenance Primers: 100 g/L.
 - 7. Pretreatment Wash Primers: 420 g/L.
 - 8. Clear Wood Finishes, Varnishes: 275 g/L.
 - 9. Clear Wood Finishes, Lacquers: 275 g/L.
 - 10. Floor Coatings: 50 g/L.
 - 11. Shellacs, Clear: 730 g/L.
 - 12. Shellacs, Pigmented: 550 g/L.
 - 13. Stains: 100 g/L.
- B. Paints and Coatings: For field applications that are inside the weatherproofing system, 90 percent of paints and coatings shall comply with requirements of California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers".
- C. Adhesives and Sealants: For field applications that are inside the weatherproofing system, adhesives and sealants shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:
 - 1. Wood Glues: 30 g/L.
 - 2. Metal-to-Metal Adhesives: 30 g/L.
 - 3. Adhesives for Porous Materials (except Wood): 50 g/L.
 - 4. Subfloor Adhesives: 50 g/L.
 - 5. Plastic Foam Adhesives: 50 g/L.
 - 6. Carpet Adhesives: 50 g/L.
 - 7. Carpet Pad Adhesives: 50 g/L.
 - 8. VCT and Asphalt Tile Adhesives: 50 g/L.
 - 9. Cove Base Adhesives: 50 g/L.

10. Gypsum Board and Panel Adhesives: 50 g/L.
 11. Rubber Floor Adhesives: 60 g/L.
 12. Ceramic Tile Adhesives: 65 g/L.
 13. Multipurpose Construction Adhesives: 70 g/L.
 14. Fiberglass Adhesives: 80 g/L.
 15. Contact Adhesives: 80 g/L.
 16. Structural Glazing Adhesives: 100 g/L.
 17. Wood Flooring Adhesives: 100 g/L.
 18. Structural Wood Member Adhesives: 140 g/L.
 19. Single-Ply Roof Membrane Adhesives: 250 g/L.
 20. Special-Purpose Contact Adhesives (That Are Used to Bond Melamine-Covered Board, Metal, Unsupported Vinyl, Rubber, or Wood Veneer 1/16 Inch (1.6 mm) or Less in Thickness to Any Surface): 250 g/L.
 21. Top and Trim Adhesives: 250 g/L.
 22. Plastic Cement Welding Compounds: 250 g/L.
 23. ABS Welding Compounds: 325 g/L.
 24. CPVC Welding Compounds: 490 g/L.
 25. PVC Welding Compounds: 510 g/L.
 26. Adhesive Primer for Plastic: 550 g/L.
 27. Sheet-Applied Rubber Lining Adhesives: 850 g/L.
 28. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent by weight.
 29. Aerosol Adhesive, General-Purpose Web Spray: 55 percent by weight.
 30. Special-Purpose Aerosol Adhesives (All Types): 70 percent by weight.
 31. Other Adhesives: 250 g/L.
 32. Architectural Sealants: 250 g/L.
 33. Non-membrane Roof Sealants: 300 g/L.
 34. Single-Ply Roof Membrane Sealants: 450 g/L.
 35. Other Sealants: 420 g/L.
 36. Sealant Primers for Nonporous Substrates: 250 g/L.
 37. Sealant Primers for Porous Substrates: 775 g/L.
 38. Modified Bituminous Sealant Primers: 500 g/L.
 39. Other Sealant Primers: 750 g/L.
- D. Adhesives and Sealants: For field applications that are inside the weatherproofing system, 90 percent of adhesives and sealants shall comply with requirements of California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers".
- E. Flooring: Shall comply with requirements of California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers".
- F. Composite Wood, Agrifiber Products, and Adhesives: Shall be made using ultra-low-emitting formaldehyde resins as defined in California Air Resources Board's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or shall be made with no added formaldehyde.
- G. Ceilings, Walls, and Thermal Insulation: Shall comply with requirements of California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers".

- H. Roofing: Roofing materials shall have a three year aged solar reflectance index (SRI) of at least 64. If three year aged value information is not available, use materials with an initial SRI of at least 82 at installation
- I. Hardscape: Paving materials shall have a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation

PART 3 - EXECUTION

3.1 NONSMOKING BUILDING

- A. Smoking is not permitted within the building or within 25 ft. (8 m) of entrances, operable windows, or outdoor-air intakes.

3.2 CONSTRUCTION WASTE MANAGEMENT

- A. Comply with Division 1 Section "Construction Waste Management and Disposal".

3.3 CONSTRUCTION INDOOR-AIR-QUALITY (IAQ) MANAGEMENT

- A. Comply with SMACNA's "SMACNA IAQ Guideline for Occupied Buildings under Construction".
 - 1. If Owner authorizes use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 1 Section "Temporary Facilities and Controls," install MERV 8 filter media at each return-air inlet for the air-handling system used during construction.
 - 2. Replace air filters immediately prior to occupancy with new filters specified in Division 23 Section "Particulate Air Filtration".

Union County Improvement Authority Union County Government Complex

BID SPECIFICATIONS
November 8, 2023

LEEDv4 - BD+C New Construction Scorecard
Project Name: Union County Government Complex
Date: 08.29.23
Level Pursuing: LEED Certified

Y	SM	WM	N	Integrative Process	1	Doc. Type
1	0	0	0	Credit Integrative Process	1	G
0	0	0	0	16	16	---
Y	SM	WM	N	Location and Transportation	16	Doc. Type
0	0	0	0	Credit LEED for Neighborhood Development	16	---
1	0	0	0	Credit Sensitive Land Protection	1	G
1	0	0	1	Credit High Priority Site	2	G
5	0	0	0	Credit Surrounding Density and Diverse Use	5	G
4	0	0	1	Credit Access to Quality Transit	5	S
0	0	0	1	Credit Bicycle Facilities	1	G
1	0	0	0	Credit Reduced Parking Footprint	1	G
0	1	0	0	Credit Green Vehicles	1	G
12	1	0	3			
Y	SM	WM	N	Sustainable Sites	10	Doc. Type
Y	0	0	0	Prereq Construction Activity Pollution Prevent Required		G
1	0	0	0	Credit Site Assessment	1	G
0	0	0	2	Credit Site Development - Protect or Restore	2	G
1	0	0	0	Credit Open Space	1	G
0	0	1	2	Credit Rainwater Management	3	G
2	0	0	0	Credit Heat Island Reduction	2	G
0	1	0	0	Credit Light Pollution Reduction	1	G
4	1	1	4			
Y	SM	WM	N	Water Efficiency	11	Doc. Type
Y	0	0	0	Prereq Outdoor Water Use Reduction (p)		Required G
Y	0	0	0	Prereq Indoor Water Use Reduction (p)		Required S
Y	0	0	0	Prereq Building-Level Water Metering		Required S
2	0	0	0	Credit Outdoor Water Use Reduction (c)	2	G
4	2	0	0	Credit Indoor Water Use Reduction (c)	6	S
0	0	0	2	Credit Cooling Tower Water Use	2	G
0	1	0	0	Credit Water Metering	1	S
6	3	0	2			
Y	SM	WM	N	Energy and Atmosphere	33	Doc. Type
Y	0	0	0	Prereq Fundamental Commissioning & Verifc Required		S
Y	0	0	0	Prereq Minimum Energy Performance		Required S
Y	0	0	0	Prereq Building-Level Energy Metering		Required S
Y	0	0	0	Prereq Fundamental Refrigerant Managemen Required		S
3	0	0	3	Credit Enhanced Commissioning	6	S
6	2	0	10	Credit Optimize Energy Performance	18	S
0	1	0	0	Credit Advanced Energy Metering	1	S
0	0	0	2	Credit Demand Response	2	---
0	0	0	3	Credit Renewable Energy Production	3	---
1	0	0	0	Credit Enhanced Refrigerant Management	1	S
0	0	2	0	Credit Green Power and Carbon Offsets	2	S
10	3	2	18			

Required prerequisites
Points to evaluate further



Y	SM	WM	N	Materials and Resources	13	Doc. Type
Y	0	0	0	Prereq Storage and Collection of Recyclables		Required G
Y	0	0	0	Prereq Construction & Demolition Waste Management Plan		Required G
0	0	3	2	Credit Building Life-Cycle Impact Reduction	5	S
1	0	1	0	Credit BPDO - Environmental Product Declarations	2	G
0	2	0	0	Credit BPDO - Sourcing of Raw Materials	2	G
1	0	1	0	Credit BPDO - Material Ingredients	2	G
2	0	0	0	Credit Construction & Demolition Waste Management	2	G
4	2	5	2			
Y	SM	WM	N	Indoor Environmental Quality	16	Doc. Type
Y	0	0	0	Prereq Minimum Indoor Air Quality Performance		Required S
Y	0	0	0	Prereq Environmental Tobacco Smoke Control		Required G
2	0	0	0	Credit Enhanced Indoor Air Quality Strategies	2	S
2	1	0	0	Credit Low Emitting Materials	3	G
1	0	0	0	Credit Construction Indoor Air Quality Management Plan	1	G
1	0	0	1	Credit Indoor Air Quality Assessment	2	S
0	0	0	1	Credit Thermal Comfort	1	S
1	0	0	1	Credit Interior Lighting	2	G
0	0	1	2	Credit Daylight	3	S
0	1	0	0	Credit Quality Views	1	S
0	0	0	1	Credit Acoustic Performance	1	---
7	2	1	6			
Y	SM	WM	N	Innovation	6	Doc. Type
1	0	0	0	Credit EP: LTr Reduced Parking Footprint.	1	G
1	0	0	0	Credit IN: Green Building Education	1	G
1	0	0	0	Credit IN: Lamp Purchasing	1	G
1	0	0	0	Credit IN: Pilot credit integrative analysis	1	G
1	0	0	0	Credit IN: Safety First - Re-Enter Your Workspace	1	G
1	0	0	0	Credit LEED Accredited Professional	1	G
6	0	0	0			
Y	SM	WM	N	Regional Priority	4	Doc. Type
1	0	0	0	Credit Sensitive Land Protection (1 pt)	1	G
1	0	0	0	Credit Surrounding Density and Diverse Uses (3pt)	1	G
1	0	0	0	Credit Access to Quality Transit (3 pt)	1	S
1	0	0	0	Credit Indoor Water Use Reduction (4 pt)	1	S
4	0	0	0			

54	12	9	35	TOTALS	Possible Points: 110
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

Documentation Type	
Separate (S):	Each building is documented separately. The score for that credit is determined by the lower performing building.
Group (G):	Both buildings are assessed individually for compliance and results are aggregated for the whole site.

*Scorecard represents preliminary points being pursued and final scorecard credits may change.

END OF SECTION 018114