CHAPTER 5
DESIGN/CONSTRUCTION DOCUMENT & CONSTRUCTION STANDARDS

5.1 RELATED STATUTORY AUTHORITY

5.1.1 SC Code § 6-9-110 exempts the State from any county, municipal or local ordinance or regulation that requires the purchase or acquisition of a permit, license, or other device used to enforce any building standard.

5.1.2 SC Code § 6-10-30 requires that all buildings be designed and constructed in compliance with the 2009 International Energy Conservation Code.

5.1.3 SC Code § 6-29-770 requires the State to comply with local zoning ordinances.

5.1.4 SC Code § 10-1-180 provides that all construction, improvement, and renovation of state buildings must comply with all applicable standards as specified in the Manual for Planning and Execution of State Permanent Improvements. The State Engineer determines the enforcement of the aforementioned codes and referenced standards on state buildings.

5.1.5 SC Code § 10-5-210 et. seq., "South Carolina Accessibility Act," sets accessibility standards for public buildings.

5.1.6 SC Code § 11-35-2720 permits the Chief Procurement Officers to prepare or review, issue, revise and maintain the specifications for supplies, services, and construction required by the State.

5.1.7 SC Code § 11-35-2730 requires that all specifications be written to assure cost effective procurement of the State's actual needs and not be unduly restrictive.

5.1.8 SC Code § 11-35-2740 permits the Chief Procurement Officers to delegate in writing to a using Agency the authority to prepare and use its own specifications. The specifications must assure maximum cost-effective procurements that are consistent with regulations promulgated by SFAA.

5.1.9 SC Code § 11-35-2750 requires that specifications prepared by architects and engineers be nonrestrictive and maximize the cost effectiveness.

5.1.10 SC Code § 11-35-3020 provides additional bidding procedures for construction procurement.

5.1.11 SC Code § 23-43-10 et. seq., "South Carolina Modular Buildings Construction Act," requires that all Modular Buildings be certified by the South Carolina Buildings Code Council.

5.1.12 SC Code § 40-3-280 and SC Regulation 11-11 requires all construction documents to bear a seal of a licensed architect, when required to be prepared by a licensed architect. Documents used to obtain a building permit must be sealed.

5.1.13 SC Code § 40-22-270 requires all construction documents bear a seal of a licensed engineer, when required to be prepared by a licensed engineer. Documents used to obtain a building permit must be sealed.

5.1.14 SC Code § 40-10-250 requires a Fire Sprinkler System Specification Sheet to be completed for every fire sprinkler system to be installed in South Carolina.

5.1.15 SC Code § 41-14-40 and 120 requires the inspection of any new boiler and the annual, or biennial, inspection of particular types of existing boilers installed in South Carolina.

5.1.16 SC Code § 48-52-810 thru 860 provides the South Carolina Energy Independence Act of 2007 which requires that all major facilities projects not exempted by the act be designed and constructed to achieve at least LEED Silver certification from the US Green Building Council or at least two globes certification using the Green Building Initiative's Green Globes rating system.

5.1.17 Governor's Executive Order No. 82-19 requires the State Engineer to assure compliance with the "State of South Carolina Building Standards in Floodplain Areas".

5.2 AUTHORITY HAVING JURISDICTION TO ENFORCE BUILDING CODES AND STANDARDS

5.2.1 The State Engineer is the authority having jurisdiction over state buildings and determines the enforcement and interpretation of codes and standards applicable to those buildings.

5.2.2 The State Engineer is also the floodplain coordinator for state construction in flood hazard areas.

5.2.3 The requirement to obtain any local Business License, if applicable, is the responsibility of both the Architect/Engineer (A/E) and the Contractor.

5.3 CODES AND STANDARDS

5.3.1 State design and construction must comply with the codes and standards, along with their published errata and other requirements listed in this Chapter.

5.3.2 If there is any conflict between the codes, standards, and/or regulations listed herein, the more stringent requirement controls.

5.3.3 Designers and Agency reviewers should ensure they have the latest errata for indicated editions to International Codes, other codes and standards.

5.3.4 Codes editions enforced at the time of first submittal govern throughout the project, unless:

A. Otherwise permitted by OSE, or

B. Design is delayed for more than 6 months, and OSE adopts editions that are more current in the interim. No project may use a code that is older than one previously adopted edition.

5.3.5 OSE has adopted the following codes:

A. International Building Code (IBC), 2024 Edition with SCBC modifications

B. International Existing Building Code (IEBC), 2024 Edition

C. International Fire Code (IFC), 2024 Edition with SCBC modifications

D. International Energy Conservation Code (IECC), 2009 Edition

E. International Fuel Gas Code (IFGC), 2024 Edition with SCBC modifications

F. International Mechanical Code (IMC), 2024 Edition with SCBC modifications

G. International Plumbing Code (IPC), 2024 Edition with SCBC modifications, and the following insertions:

1. Section 305.4.1, insert "18" and insert "18"

2. Section 903.1.1, insert "8"

H. International Private Sewage Disposal Code (IPSDC), 2024 Edition

I. International Property Maintenance Code (IPMC), 2024 Edition

J. International Residential Code for One- and Two-Family Dwellings (IRC), 2024 Edition with SCBC modifications and the following insertions:

1. P2603.5.1, insert "12" and insert "24"

K. International Wildland – Urban Interface Code (IWUIC), 2024 Edition

Note: The IWUIC does not supersede existing statutory requirements.

L. International Code Council Performance Code (ICCPC), 2024 Edition, upon State Engineer's approval

M. International Swimming Pool and Spa Code (ISPSC), 2024 Edition

N. Standard for Bleachers, Folding and Telescopic Seating, and Grandstands, ICC 300-2023 Edition

O. National Electrical Code (NEC) [NFPA-70], 2023 Edition with SCBC modifications

P. National Electrical Safety Code (NESC), IEEE-C2-2023 Edition

Q. Accessible and Useable Buildings and Facilities, ICC A117.1 (latest edition). Note, this is the standard adopted by the South Carolina Accessibility Act, but this requirement does not relieve the Agency or the design professional from the Federal Statutory requirements that design, and construction comply with the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities. See http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards.

R. State Fire Marshal rules, regulations, and policies. See http://statefire.llr.sc.gov/osfm/index.aspx.

S. South Carolina Elevator, Code, & Regulations. The SC Elevator Code references the American Society of Mechanical Engineers Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks, and supplements thereto, ASME A17.1. See http://www.llr.sc.gov/elevators/ .

T. State of SC Telephone Equipment Room and Communications/Data Systems Policies as formulated by the Office of Technology and Information Services (OTIS).

U. State of SC Building Standards in Floodplain Areas.

V. The South Carolina Modular Buildings Construction Act.

W. National Board Inspection Code (NBIC), latest edition adopted by SCLLR

Applicable codes must be listed on the Construction Documents utilizing the OSE Table of Codes and Standards.

5.4 FLOOD HAZARD AREA DEVELOPMENT

5.4.1 General Requirements

The "State of South Carolina Building Standards in Floodplain Areas" requires compliance with the criteria in Title 44, Code of Federal Regulations, Parts 60.3 and 60.5. See https://www.ecfr.gov/cgi-bin/text-

idx?SID=89f14de3c404ac61eced609bc41ecc3c&mc=true&node=pt44.1.60&rgn=div5 Copies of these Parts are available from the State Coordinator's Office for the National Flood Insurance Program (NFIP).

5.4.2 Applicable Definition

FLOOD HAZARD AREAS are those areas identified by the Federal Emergency Management Agency (FEMA) on Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) that are subject to inundation by a 100-year flood. (Any Zone A or Zone V is a flood hazard area).

5.4.3 Permitting

A. Where a project provides for new construction or improvement to an existing structure in a flood hazard area, the Agency must submit to the OSE Project Manager a Permit to Develop in a Flood Hazard Area (SE-510). For projects within the Agency's Construction Contract Award Certification, submit the form directly to the State Engineer or designee.

B. The Agency should submit its application at the earliest opportunity, preferably at the time of schematic document submittal.

C. The Agency must obtain this permit prior to starting construction.

D. If the Agency intends to construct a non-residential structure with the first floor below the base flood elevation, the Agency must design the structure as a floodproofed structure and submit a Floodproofing Certificate, (FEMA Form 086-0-34), to OSE with the Construction Documents Submittal.

E. The Agency may obtain a modified permit for an historic structure that is listed, eligible to be considered for listing or a contributing property to a listing in the National Register of Historic Places,. The Agency must submit documentation from the State Historic Preservation Office (SHPO) to verify the status of the building and provide details to what extent the building will be floodproofed without compromising the historical listing.

5.4.4 Permit Requirements

A. The Agency, with the assistance of the A/E, must provide all information required on the SE-510 or designate it as not applicable.

B. The Agency must include all required forms and certifications with the submittal to OSE.

C. The Agency must submit the following certifications when required for structures constructed in a flood hazard area:

1. No-Rise Certification required for development in a regulatory floodway: A registered professional engineer must furnish the certification and supporting technical data.

2. Elevation Certificate (FEMA Form 086-0-33) required for structures in an A-zone or V-zone: A registered land surveyor must furnish this certification. Submit this form to OSE as soon as the lowest floor is completed.

3. Floodproofing Certificate (FEMA Form 086-0-33) for non-residential floodproofed structures in an A-zone: A registered professional engineer or architect must furnish this certification to OSE with the SE-510.

4. V-Zone Design Certificate required for structures in a V-zone: A registered professional engineer or architect must furnish this certification, using the certificate from https://crsresources.org/300-3/, to OSE with the SE-510.

5.4.5 Permit Variance

A. Only the Floodplain Variance Board, at the request of OSE, may grant a variance permit to the Flood Hazard Area development requirements.

B. If the Agency wants to pursue a variance, it must send a written request to the State Engineer that contains the following information:

1. The particular floodplain management standard which prevents the proposed construction or improvement.

2. The characteristics of the property or proposed structure which prevents compliance with the flood management standards.

3. The minimum reduction of standards which would be necessary to permit the proposed construction or improvement.

4. The particular hardship which would result if all standards were applied.

5. Any additional information requested by the State Engineer.

5.4.6 Flood Maps

A. Flood maps for specific sites are available for review and download at http://msc.fema.gov/portal.

5.5 INFORMATION TECHNOLOGY REQUIREMENTS

5.5.1 The Agency must notify the Division of Technology Operations of all construction projects involving repair, modification, or installation of building communications systems, including telephone equipment rooms at the following address:

Department of Administration - Division of Technology Operations
4430 Broad River Road
Columbia, SC 29210
Phone: (803) 896-0001
Toll Free: (800) 922-1367
Email: servicedesk@admin.sc.gov

5.5.2 This notification should occur as early as possible in the project planning process to enhance coordination during design and construction and to minimize delays and rework.

5.6 EXISTING STRUCTURES - SPECIAL CONSIDERATIONS

5.6.1 Applicable Code

A. The IEBC applies to the repair, alteration, change of occupancy, addition, and/or relocation of all buildings. The IEBC offers three methods for compliance:

1. Prescriptive Compliance Method.

2. Work Area Compliance Method (refer to the Work Area definition in IEBC); and

3. Performance Compliance Method.

B. It is the intent of the IEBC that one method for compliance is chosen and applied in whole to the design of the existing structure. The A/E must indicate the compliance method chosen by properly completing the OSE Code Table 3E and applying it to the Code Criteria section of the construction documents. In addition, the A/E may be required to include OSE Code Tables 1 thru 11, as applicable, to indicate compliance with IBC.

C. The A/E must provide the following documentation with the first submittal:

1. Square footage and locations of areas to be renovated, existing and new walls, wall types, fire or smoke resistive assemblies, existing openings to be infilled and new openings to be cut,

2. Square footage, occupancy classifications and uses of existing spaces not being renovated,

3. Details of investigations that determined the Type of Construction of the existing building and the types and locations of resistive construction, such as:

a. Area separations

b. Vertical and horizontal occupancy separations

c. Horizontal exits

d. Tenant separations

e. Rated corridor construction

f. Shafts, and

g. Other life safety features incorporated into the original design.

4. Overall floor plans indicating the interface of exiting from renovated areas with adjacent areas, the paths of travel, and exit signage.

5. Accessibility: Comply with IEBC Section 306. If compliance is technically unfeasible as defined by the code, explain where and why.

6. If the Performance Compliance Method is chosen, the A/E must submit Table 1301.7 and Table 1301.9 from the IEBC. Back-up data to these tables may need to be submitted.

5.6.2 Hazardous Materials

A. The Agency should test for hazardous materials in any building or part of a building that it plans to repair or alter.

B. The Agency must comply with all State and Federal Regulations regarding testing for, abating, handling, and disposing of hazardous materials.

C. Asbestos Building Inspection Requirements:

1. Prior to beginning a renovation or demolition operation at any facility, the facility owner and/or owner's representative must ensure that an asbestos building inspection is performed to identify the presence of ACM.

2. The asbestos building inspection must include the facility or part of the facility affected by the renovation or demolition operation.
3. To be acceptable, an asbestos building inspection must have been performed no earlier than three years prior to the renovation or demolition, or, if more than three years have elapsed since the most recent inspection, the previous inspection must be confirmed and verified by a person licensed by DHEC as an asbestos building inspector.

5.6.3 Historic Building Modifications

A. An historic building is a building listed on National Register of Historic Places. South Carolina law encourages state agencies and institutions to preserve National Register-listed properties they own or lease by establishing a consultation process with the State Historic Preservation Office (SHPO). The process is designed to incorporate historic preservation concerns with the needs of state projects. Agencies are encouraged to consult with SHPO on properties that are eligible for listing on the National Register.

B. The Agency and A/E should prepare a plan of action for a project on an historic building using one or more of the four distinct standards of treatment of historic properties—Preservation, Rehabilitation, Restoration or Reconstruction.

C. The Agency and A/E should use The Secretary of the Interior's Standards for the Treatment of Historic Properties in formulating the plan of action. See https://www.nps.gov/tps/standards.htm .

D. With the Agency's and A/E's input, OSE, in conjunction with SHPO and other interested state agencies, will determine the requirements for the renovation of historic buildings.

E. The Agency may request a meeting with OSE for this purpose prior to or concurrent with the submittal of the Schematic Design phase documents.

5.6.4 Seismic Requirements

A. When the Agency plans alterations to a building, the Agency must consult with OSE to determine if the IEBC requires a preliminary seismic evaluation. The Agency should obtain this determination before it concludes the fee negotiations with the selected A/E.

B. When required by OSE, a structural engineer must perform the preliminary seismic evaluation of the existing building or structure(s) and prepare a report. A preliminary seismic evaluation is a Tier 1 evaluation in accordance with ASCE/SEI 41-17 Seismic Evaluation and Retrofit of Existing Buildings (as referenced in ICC).

C. The preliminary evaluation must include the complete examination of all available documents pertaining to the design and construction of the building and an "on-site" examination of the structural system(s) to verify the building was constructed in accordance with the documents.

D. The structural engineer must base the Tier 1 evaluation on the following minimum requirements:

1. For Risk Category I, II, and III (IBC Table 1604.5), a Life Safety (LS) level of performance.
2. For Risk Category IV (IBC Table 1604.5), an Immediate Occupancy (IO) level of performance.
3. When soil properties are unknown as to site class, the engineer must use Site Class D unless the engineer determines that Site Class E or F is likely. See IBC Chapter 16.

E. After performing a seismic evaluation, the structural engineer must prepare a final report that includes the following:

1. The scope of the investigation.
2. The site and building data including a general building description, structural system description (framing, lateral-force-resisting-system), floor & roof diaphragm construction, basement, and foundations systems.
3. Nonstructural systems description (all nonstructural elements affecting seismic performance).
4. Building Construction Type.
5. Performance Level.
6. Level of Seismicity.
7. Soil Type.
8. List of Assumptions: (material properties and site soil conditions); and
9. Findings: (a prioritized list of deficiencies)

F. The Agency must submit a copy of the preliminary seismic evaluation report to OSE at the Schematic Design phase. OSE, in consultation with the Agency, will determine the extent to which seismic retrofitting must be included in the renovation project.

5.6.5 Accessibility by the Physically Disabled

A. If in the opinion of the A/E, the building cannot provide accessibility to the physically disabled due to technical infeasibility as defined by the code, the A/E must provide, during Schematic Design submittal:

1. A prioritized list of deficiencies.

2. The reasons supporting a finding of technical infeasibility; and

3. Design alternatives.

B. After reviewing the Schematic Design, OSE may consider "technical infeasibility" as an acceptable rationale for less than full compliance.

5.7 MODULAR BUILDINGS

5.7.1 Modular buildings are buildings of closed construction, other than mobile or manufactured homes, constructed off-site in accordance with applicable codes, and transported to the point of use for installation or erection.

5.7.2 Installation of modular buildings is construction work that must meet the same requirements as new construction. The codes cited in Section 5.3 are applicable.

5.7.3 The Agency and A/E should give specific attention to design of foundations (for seismic and wind loading).

5.7.4 The Agency must comply with Chapter 10 when moving state-owned modular buildings.

5.8 PROHIBITED BUILDING MATERIALS

5.8.1 Hazardous Materials:

The Agency may not use hazardous materials on state projects without prior approval from OSE, even if the law allows such use.

5.8.2 Impact Resistant Gypsum Wallboard:

Impact resistant gypsum wallboard may not be used in State buildings unless prior approval is obtained from OSE. If OSE approves high impact resistant gypsum wallboard, the Agency must indicate its use in an appropriate location readily visible and approved by the Fire Authority Having Jurisdiction.

5.9 DESIGN RELATED CONSTRUCTION COORDINATION, PERMITS AND APPROVALS

5.9.1 The Agency is responsible for obtaining all design and construction related permits and approvals from other authorities having jurisdiction over the project.

5.9.2 State law requires the Agency to comply with local zoning ordinances as they affect the use and appearance of buildings.

5.9.3 The Agency will need to contact other authorities, including local and state authorities, to obtain permit requirements. Appendix H provides a listing of design-related permits the Agency may be required to obtain.

5.9.4 The Agency must ensure the A/E incorporates the requirements of all authorities having jurisdiction into the construction documents.

5.9.5 The Agency must either provide OSE with copies of all design-related permits and approvals or with certification that the Agency has obtained them prior to applying for a building permit.

5.10 ENERGY CONSERVATION AND SUSTAINABLE CONSTRUCTION

5.10.1 All projects meeting the definition of a major facility project must be designed, constructed, and certified to achieve at least LEED Silver certification from the US Green Building Council or two globes certification using the Green Building Initiative's Green Globes rating system. Agencies must use the latest edition of LEED or Green Globes to achieve this.

5.10.2 Major Facilities Projects are:

A. State-funded projects for new construction in which the building to be constructed is larger than 10,000 gross square feet.

B. State-funded projects for renovation of a facility in which the renovation will cost more than 50% of the replacement value of the facility or the renovation involves a change in occupancy.

C. State-funded projects for commercial interior tenant fit-out where the leasable area to be fitted out is greater than 7,500 square feet.

5.10.3 Exemptions

Major facilities projects do not include the following:

A. Any building that does not have conditioned space as defined by ASHRAE's Standard 90.1.

B. Any public-school building (grades K – 12) as defined in SC Code § 59-1-50.

C. Any correctional facility constructed for the Department of Corrections, Department of Mental Health, or Department of Juvenile Justice.

D. A building project funded by the Department of Public Health and the Department of Environmental Services in which the primary purpose of the building project is for the storage of archived documents.

E. Any building funded by the State Ports Authority, the Coordinating Council for Economic Development, or the State Infrastructure Bank.

5.10.4 Performing the Cost Benefit Analysis of the Rating System

A. All projects meeting the definition of a major facility project must submit a Cost Benefit Ratio of the rating system to be used, Green Globes or LEED. The following methodology must be used in determining the Cost Benefit Ratio.

1. 10 years must be used as the Payback Period (**PBP**) to evaluate the return on the investment.

2. Energy based utilities, water usage and **water** disposal and maintenance costs must be used as construction practices that are measured.

3. The A/E must develop and compare two energy models, one Baseline Energy Model (meets code) and one Sustainable Energy Model (meets Green Globes or LEED). The A/E would do this during the Schematic Design Phase (Phase 1 of the A-1 approval process).

5.10.5 Energy Performance Requirements

A. MAJOR FACILITY PROJECT DESIGNED TO ACHIEVE TWO GLOBES CERTIFICATION: The A/E must design the project to earn at least 20% of the available points for energy performance under Green Globe's rating system "C.1.1 Energy Consumption."

B. MAJOR FACILITY PROJECT DESIGNED TO ACHIEVE LEED SILVER CERTIFICATION: The A/E must design the project to earn at least 40% of the available points for energy performance under UBGC's rating system "EA Credit 1: Optimize Energy Performance."

5.10.6 Waiver of Energy Performance Requirements

A. The Agency may request a waiver from OSE of the Energy Performance requirements in Section 5.10.6.

B. A waiver requires OSE's determination that meeting the energy performance requirements is not economically feasible.

C. If the Agency desires a waiver, the Agency must submit to OSE documentation showing that the incremental cost of achieving the energy performance requirements cannot be amortized over a period of 10 years.

5.10.7 Reporting Requirements

The Agency must make the following reports to OSE and the Energy Office:

A. Upon final completion of a project: Submit to the Energy Office a description of all potential environmental benefits, including, but not limited to, water resources savings and reduction of water waste. The Agency may obtain this information from the facility designer.

B. Upon certification of a facility: Submit to OSE the level of LEED or Green Globe certification achieved for facility.

C. Annually Submit to the Energy Office:

1. A report of actual savings in energy cost for all major facilities designed and constructed to the standards of the Energy Conservation and Sustainable Construction Act.

2. Any conflicts or barriers that hinder the effectiveness of the Energy Conservation and Sustainable Construction Act.

D. In the 5^{TH}, 10^{TH}, and 15^{TH} year following certification of a facility: Submit to the Energy Office a report on the ability of the facility to continue to operate at the standard to which it was originally certified.

5.11 GREEN PURCHASING INITIATIVE

5.11.1 South Carolina has adopted a Policy encouraging Green Purchasing. This Section includes a statement of that Policy and standards in the Policy specific to construction.

5.11.2 More information, including the entire Policy, is available at https://procurement.sc.gov/osp/green

5.11.3 Agencies should discuss this Policy with its Architect-Engineer for purposes of incorporating sustainable construction practices in all its projects. Agencies should also consider the following:

A. Receiving and reviewing as much information as legally allowed by electronic means; and

B. Holding webinars and conference calls for all types of meetings to allow attendance without the related travel time and expenses. Such electronic meetings will never eliminate the need for site visits but should be used as

often as feasible.

5.11.4 Statement of Policy

A. South Carolina state government seeks to further reduce the environmental and human health impacts of its operations by integrating environmental considerations into its procurement process.

B. South Carolina state government is committed to environmentally preferred purchasing in recognition of the need to more efficiently use natural resources, reduce waste, save money, sustain markets for materials collected in recycling programs and protect South Carolina's environment, economy, and the quality of life of all its citizens.

C. Therefore, it is the policy of the State of South Carolina to endeavor to:

1. Improve or implement green purchasing practices that reduce waste and result in the purchase of fewer products, when practicable and cost effective, without reducing the safety or quality of the products.

2. Make purchasing decisions with the understanding and consideration of the environmental impact and life cycle cost of a product or service during its manufacture, transport, use and end-of-life management.

3. Identify and purchase products and services that prevent pollution, eliminate, or reduce toxins, conserve energy and water, contain recycled-content material and minimize environmental impacts.

4. Purchase from South Carolina businesses to minimize transportation costs and emissions, when it can be done with adequate competition and without compromise of performance or quality of products or services.

D. This Policy applies to all South Carolina state agencies and publicly funded colleges and universities and others defined as governmental bodies per SC Code Section 11-35-310(18).

1. Vendors, contractors, and grantees will comply with applicable sections of this policy for products and services that are provided to the state of South Carolina.

2. All purchases under this policy are subject to local, state, or federal requirements as applicable.

3. Nothing in this policy should be construed as requiring a state agency or publicly funded college or university to procure products that do not perform according to their intended use or reduce safety, quality, or effectiveness.

5.11.5 Standards Specific to Construction

A. GREEN BUILDING PRACTICES - Consider a whole-systems approach to the design, construction, and operation of buildings and structures that help mitigate the environmental, economic, and social impacts of construction, demolition, and renovation. Green Building Practices such as those described in the LEED or Green Globe Rating Systems, recognize the relationship between natural and built environments and seeks to minimize the use of energy, water, and other natural resources and provide a healthy productive environment.

B. GREEN BUILDING CONSTRUCTION

1. Consider the use of on-site renewable energy such as solar, wind, geothermal and biomass to reduce impacts of fossil fuel use.

2. Consider deconstruction and re-use of materials or purchase previously used or salvaged building materials to reduce waste and the need for virgin materials.

3. Reduce the depletion of finite raw materials by using rapidly renewable materials such as bamboo, wool, cotton, linoleum, and cork.

4. Maximize the use of natural lighting in buildings to avoid the use of artificial lighting.

5. Develop a plan for measurement of building water and energy consumption to provide ongoing accountability of actual usage.

6. When renovating space, plan for flexibility and future change by using easily moved walls, outlets, etc.

7. Consider short-term and long-term costs in specifying material and equipment. This includes an evaluation of the total costs expected during the life of the material and equipment.

C. GREEN LANDSCAPING

1. Provide for recycled-content materials for hardscape and landscape structures.

2. Reduce water used for irrigation by using plants that are native to the area where they are planted and drought-tolerant plants that require minimal or no watering once established.

3. Reduce water pollution and heat-island effect by reducing the area of impervious surfaces in the landscape. Permeable substitutes such as pervious concrete or pavers are preferred for walkways, patios, driveways, and low-volume traffic areas.

4. Reduce light pollution by only lighting areas to the level required for safety and comfort.

5.12 REQUIRED INSPECTION SERVICES

5.12.1 The Agency must provide for the construction inspection services required by Chapter 1 of each International Code Council Series of Codes adopted in Section 5.3 and special inspection services required in Chapter 17 of the IBC.

5.12.2 More information on inspection services, including the listing of Inspection and Testing firms on statewide term contract, is located at https://procurement.sc.gov/contracts/search?v=10227-9919-0-0

5.13 REQUIRED BOILER INSPECTION

5.13.1 Any new boiler installed and operated in this State, unless otherwise exempted, must be designed and constructed in accordance with the ASME Code or a nationally recognized code of construction. The boiler must be marked in accordance with the code of construction and must be registered with the National Board of Boiler and Pressure Vessel Inspectors. Copies of registration documents to be turned over with record documents (See section 7.22) .

5.13.2 The National Board Inspection Code, Part 1 Section 1.4.5, requires inspection and testing of all new installations before commencing operation. Upon completion, Part 1 Section 1.4.55 requires the installer to complete and certify the Boiler Installation Report (I-1). Electronic copies of the report must be given to the agency for the boiler file. Until this report is received, SCLLR will not issue a Boiler Operating Certificate allowing operation of the boiler. Testing and maintenance must be performed by qualified technicians.

5.13.3 Projects that include the installation or refurbishment of boilers must direct the contractor to request inspection from SCLLR, Boiler Safety Program, (803) 896-5171.

5.14 NON-RESTRICTIVE SPECIFICATIONS

5.14.1 State Procurement Law requires nonrestrictive specifications.

A. Determine the essential features of the product used as the basis of design and, unless there is only a single source (brand name only) for products meeting the essential features of the basis of design, list multiple products and their manufacturers that meet these features.

B. Ensure all listed products/manufacturers (and appropriate model numbers) meet all the essential features. A product should not be listed contingent on a subsequent determination by the A/E that it meets the essential features of the basis of design.

C. Alternatively, identify the essential features and provide that any product/manufacturer who meets the essential features can be approved utilizing substitution rules set forth in the procurement.

5.14.2 Agency's Authorization of Brand Name or Equal Specification

A. Specifications that list a construction item by brand name "or equal" must include a description of the particular design, functional, or performance characteristics which are required.

B. Where a brand name or equal specification is used in the Bidding Documents, the documents must have explanatory language that the use of a brand name and model number is for the purpose of describing the standard of quality, performance, and characteristics desired and is not intended to limit competition.

5.14.3 Agency's Authorization of Brand Name Only Specification

A. The Agency may use a Brand Name Only specification where only one brand will suffice and there is competition for that brand. For example, if the Agency has a $50 million building construction project and the building controls on campus are all the same named brand, the Agency may use a Brand Name Only specification for building controls within the project specifications. In such case, multiple prime contractors will be able to bid for the project. However, if use of Brand Name Only specification means only one contractor will be eligible to bid for the project, the procurement must be justified as a Sole Source procurement.

B. To use a Brand Name Only specification, the Agency's Procurement Officer must document its determination in writing that only one brand meets the Agency's requirements for a portion of the construction project, and that multiple potential contractors will be able to bid the project with that specified brand. The Agency must make its determination on form MMO/OSE-139 – Justification for Brand Name Only Specification.

C. The Agency must submit its justification for a brand name only specification to OSE for review and place a copy of it in its procurement file.

D. The Agency must submit a separate justification for each brand name only specification; however, multiple products by the same manufacturer can be included on the same form.

E. The Agency's use of a Brand Name Only specification is protestable as a protest of the specifications.

F. If a brand name only specification is added to a contract by change order, contract modification, or contract negotiation per a request or directive by the Agency and is part of a construction project that exceeds the Agency Construction Contract Certification, the Agency must send a copy of the written determination to the OSE Project Manager.

5.15 DOCUMENT SUBMITTALS TO OSE

5.15.1 Agencies or their A/E must submit Schematic Design and Construction Documents to OSE for review and approval in accordance with the procedures of this chapter.

5.15.2 OSE will not review drawings and documents that are incomplete, ambiguous, or difficult to read. OSE will notify the A/E and the Agency of such condition and ask for a revised submission.

5.15.3 OSE's statutory review period begins when a complete, unambiguous, and readable set of drawings and documents is received.

5.16 PROJECT NAME AND NUMBER

5.16.1 The Agency name, State project name and State project number is to be placed on all project documents and correspondence (written and electronic).

5.16.2 If the project is a PIP, the project name and number is that shown on the Form A-1.

5.16.3 If the project is a Non-PIP, the name is the one assigned by the Agency and the project number is the one assigned by OSE.

5.17 DRAWINGS

5.17.1 The cover sheet of the drawings must have (at a minimum) the Agency name, State project name, and State project number.

5.17.2 Drawings issued to OSE for review must be formatted and submitted as follows:

A. A final printed font height of 1/8". The font size of graphic scales, elevations, and sections may need to be increased to assure legibility for reduced sized printing.

B. A maximum overall paper size of 30" x 42".

C. Drawings (printed set not to exceed 20 pounds) and Project Manuals must be bound; and

D. Electronic submittal must be in optimized PDF format. Submittals should separate disciplines (Civil, Architectural, Structural, Mechanical, etc.) in order to keep individual files to a minimal size.

5.18 PROJECT MANUAL

5.18.1 Major Construction Projects: The Table of Contents provided in Appendix B.1 lists the requirements for organizing the Project Manual.

5.18.2 Minor Construction Projects: The Table of Contents provided in Appendix B.3 lists the requirements for organizing the Project Manual.

5.18.3 Task Order Construction Projects: The Table of Contents provided in Appendix D.4 lists the requirements for organizing the Project Manual.

5.18.4 The submittal of the Project Manual, printed or electronic, must contain all documents combined and assembled in accordance with the order given in the appropriate Table of Contents.

5.19 SPECIAL BIDDING REQUIREMENTS

5.19.1 Bid Alternates

A. The use of Bid Alternates in bidding can be problematic and should be avoided if possible. The Base Bid is to meet the Agency's needs. Alternates are used only to enhance the Base Bid.

B. Alternates may not exceed three (3) in number.

C. An Agency should not include any Alternate that the Agency has no reasonable chance of obtaining within the approved construction budget.

D. The construction documents must clearly reflect the Base Bid and all Alternates.

E. The Agency may accept Alternates in any order or combination and must determine the low Bidder based on the sum of the Base Bid and Alternates accepted.

5.19.2 Subcontractor Listing Requirements

A. The Procurement Code sets forth the following:

1. The Agency, in consultation with the project architect/engineer, must identify by license classification or subclassification the Subcontractors:

a. Who are expected to perform work for the prime Contractor on the project; and

b. Whose subcontracts are expected to exceed three percent (3%) of the prime Contractor's total base

bid.

2. The Agency, in consultation with the project architect/engineer, may identify by license classification or subclassification a Subcontractor expected to perform work for the prime Contractor which is vital to the project.
3. The Agency is to make its identification of certain Subcontractors expected to perform work for the prime Contractor by license classification or subclassification (per SCLLR) in the Invitation for Bids. On page BF-2 of the Bid Form, Column A is provided for the license abbreviation.
4. The Agency's determination of which Subcontractors to list in the invitation for bids is not protestable.
5. A Bidder's listing of Subcontractors in response to the Invitation for Bids is protestable.

B. When bidding the work, the Contractor is required to identify the Subcontractor(s) who will perform the listed work.

C. If the prime Contractor is expected to self-perform an item of work rather than subcontract that item, do not list that license classification or subclassification on the Bid Form. For example, if the Agency is bidding an air conditioning project and under the Contractor's Licensing Act only a mechanical Contractor with an air conditioning subclassification ("AC") can bid the work as a sole prime Contractor, do not include Air Conditioning in the list of Subcontractors.

5.20 DESIGN SUBMITTAL REQUIREMENTS

5.20.1 The A/E with Agency's approval must submit the following to OSE for review:

A. Schematic Design Documents and Estimate of Construction Cost transmitted with the Design Document Transmittal Form (SE-371).

1. To assist OSE in understanding the design intent, the Schematic Design Document submittal to OSE must include a copy of the programming statement.
2. To be "Properly Completed" the Schematic Design Documents submittal must meet the following minimum level of project information and project definition:
   - **a.** Complete the Code Tables 3 and 4 (Appendix H) to the extent information is known and applicable. Projects that renovate, modify, or add to an existing structure will require Table 3E, in lieu of Table 3, and additional documentation noted in Section 5.6.
   - **b.** Site Plan showing the following:
     - **1)** Building.
     - **2)** Property lines.
     - **3)** Easements.
     - **4)** Encroachments.
     - **5)** Setbacks.
     - **6)** Streets.
     - **7)** Parking.
     - **8)** Existing contours.
     - **9)** Adjacent structures and distance to adjacent structures.
     - **10)** Utilities.
     - **11)** Fire apparatus access.
     - **12)** Accessibility.
     - **13)** North Arrow; and
     - **14)** Other items defining the site (hazards, wetland, fire district, environmental issues, etc.).
   - **c.** Drawings showing the following:
     - **1)** Basic Code Review and list of applicable codes and standards.
     - **2)** Individual Spaces with names.
     - **3)** Life safety plans with wall, floor, and roof rating delineated and complete means of egress delineated with exit signs and exit capacities. Identify doors with card access and other security measures.
     - **4)** Elevations sufficient to describe the building.
     - **5)** Facilities for the physically disabled incorporated within the building.
     - **6)** Shaft locations and ratings on the Life Safety Plan; and

7) Fire extinguisher locations on the Life Safety Plan.

d. Unless otherwise agreed to by OSE, the Schematic Design Document review will be a tabletop review with the OSE Project Manager, OSE discipline reviewers, Agency Project Manager, Architect, and Architect's civil, structural, mechanical, fire protection, and electrical engineering consultants present. The A/E is responsible to document the comments and decisions made at the tabletop review and distribute the documentation to all attendees for review and approval.

B. Construction Documents and Final Estimate of Construction Cost separated into categories that align with SCLLR contractor licenses transmitted with the SE-371.

To be "Properly Completed" the Construction Documents submittal must be coordinated and include corrections from previous reviews and must include the following information:

1. Drawings must have as a minimum; items indicated in the Schematic Design Documents review and additional items that may include:

a. Cover/Index:

1) Abbreviations & Symbols.

2) Legends.

3) Notations.

4) Location Map; and

5) Signed and dated certifications contained in Appendix H.

b. Project Code Criteria:

1) Listing of all Codes applicable to project.

2) Properly completed Code Tables 1 thru 11 from Appendix H. For existing structures, substitute Table 3E for Table 3.

3) UL Design Numbers for Rated Systems; and

4) All fire and/or smoke-rated elements of the project (such as floors, ceilings, roofs, partitions, barriers, and walls) are to be indicated on all disciplines.

c. Civil/Site/Landscape

1) Building & Structures: existing and proposed.

2) Pedestrian & Vehicular accesses: existing and proposed including:

a) Fire Apparatus access; and

b) Access for disabled.

3) Parking.

4) Existing and new utilities; and

5) Landscaping/topography – hard & soft: existing and proposed.

d. Architectural Drawings:

1) Plans with north arrow (life-safety items are to be submitted as separate plans, unless they are clearly shown on a single floor plan):

a) Roofs.

b) Floors.

c) Accessible routes clearly defined with turning radius and locations and dimensions of accessible fixtures as required by ANSI.

d) Layouts of storage shelving, casework, laboratory equipment, or other specialties.

e) Hazard Control areas; and

f) Shafts and chases with ratings.

2) Life-safety plans including the following:

a) Rated Walls with symbols.

b) Rated floors with rating.

c) Rated Components.

d) Details of Rated Assemblies.

e) Exit Signs.

f) Complete means of egress, including Exit Travel Distances and Common Path of Egress Travel Distances.

g) Exit capacities.

h) Identify doors with card access and other security measures; and

i) Fire extinguisher locations.

3) Elevations – Exterior and Interior.

4) Sections & Details of construction including wall, shaft, and building sections; and

5) Openings, Finish & Other Schedules.

e. Structural Drawings.

f. Fire Protection Drawings.

g. Plumbing.

h. Mechanical.

i. Electrical.

j. Other drawings that may be required to fully identify the project including, if not shown elsewhere in the construction documents, drawings showing:

1) Approximate size of special equipment (i.e., compressors, generators, transformers, electronic equipment racks, consoles, panels, distributing frames, hoists, and cranes).

2) Distance to adjacent buildings; and

3) Unusual Features.

2. Project Manual completed, corrected, and coordinated to include the following:

a. Table of Contents.

b. Front-end documents:

c. Soils Report, Hazardous Materials Reports, and other informational data pertinent to the project.

d. Specifications:

1) Technical Specifications; and

2) The documents must include the Fire Sprinkler System Specification Sheet, as published by the State Fire Marshal. The Fire Sprinkler System Specification Sheet must be prepared, sealed, signed, and dated by the projects fire protection engineer who is a South Carolina licensed professional engineer.

3. Other Documents:

a. Additional narrative, schedule, calculations, drawings, and information required to demonstrate to OSE and the Agency a thorough understanding of the project and compliance with codes.

b. Documents showing design compliance with the IECC for commercial buildings or portions thereof (not otherwise exempted).

c. Page 2 of the SE-310, submitted separately, to include the following:

1) Construction Budget for this Contract,

2) Final Estimate of Construction Cost, including all Alternates,

(**NOTE**: This Estimate must be the same or less than the Construction Budget. OSE will not advertise projects that are estimated to exceed the Construction Budget.)

3) Status of all required permits, zoning appeals, BAR approvals, etc.

4) Copies of all permits and approvals are to be submitted with this page; and

5) This form must be approved by the Agency.

C. Bid Documents transmitted with the SE-371.

The Bid Documents are the final documents printed and issued to prospective bidders, which incorporate the approved resolution of all previous review comments. These must be submitted to OSE with design professionals' seals and signatures.

5.20.2 The Agency or its A/E may request additional code reviews by OSE; however, any such additional reviews do not count against OSE statutory review time.

5.20.3 All submittals may not be required on all projects. The A/E must contact the OSE Project Manager for number of copies and necessary submittals.

5.21 OSE REVIEW AND APPROVAL PROCESS

5.21.1 OSE must review design and construction documents for projects exceeding the Agency's construction contract

certification. OSE can provide technical assistance to agencies in reviewing design and construction documents within the Agency's certification.

5.21.2 OSE's review of design and construction documents for general compliance with codes does not relieve the Agency or the A/E of responsibility for knowledge of and compliance with all codes and regulations of other governing authorities.

5.21.3 OSE may revoke any approval issued under the provisions of this Manual where OSE based its approval on any false statement or misrepresentation of fact in correspondence, drawings, specifications, or data.

5.21.4 If there is a conflict between the requirements of any code, regulation, or standard regarding safety, health, energy-use compliance, or environmental compliance, the Agency or the A/E should request an interpretation from the OSE Project Manager.

5.21.5 For scheduling purposes, the Agency and the A/E should allocate a total of 45 days for reviews of "properly completed" submittals. When the A/E provides a properly completed submittal, the review time will commence from the date of receipt of the submittal by the OSE Project Manager until the date the review is completed.

5.21.6 OSE will provide written review comments to the Agency and the A/E upon completion of each stage of document review.

5.21.7 If the Agency allows, the A/E may continue to work on the project, at its own risk, during the OSE review periods. This does not relieve the A/E from complying with all OSE comments made during the review periods.