

# 1 General

## .1 Codes and Standards

- .a Project design and construction **shall** meet all governing codes, standards and regulations. These codes and standards **shall** supersede the WCPSS Design Guidelines in event of a conflict. Among the codes and standards to be complied with are the following:
  - i. North Carolina State Building Code including the General, Mechanical, Electrical, Handicap and Gas Volumes.
  - ii. ADA Requirements
  - iii. NEMA Standards
  - iv. ASHRAE Guide (latest edition) including ASHRAE 90 and ASHRAE Standard for Energy Conservation in new buildings. UL Standards (or compatible accepted standards by NCBC)
  - v. NFPA Guide including the following: NFPA 17 (Range Hood Fire Extinguishing Equipment), NFPA31 (Oil Burning Equipment), NFPA 72A (Local Protection Signalling Systems), NFPA 90A (Ducts, Fire Dampers, Air Conditioning and Ventilation Systems), NFPA 91 (Blower and Exhaust Systems), NFPA 96 (Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment), and NFPA 101 (Life Safety Code)
  - vi. Code for Energy Conservation in New Building Construction (Jointly prepared by BOCA, ICBO, and SBCCI Codes)
  - vii. Local Zoning Ordinances

## .2 Definitions and Abbreviations

- .a **Definitions:** Throughout this guide, mandated requirements are differentiated from recommendations or commentary as follows:
  - i. Mandates: Indicated by use of “**shall**”, “**will**”, “**use**”, or “**shall not**”, “**do not**” (in bold type)
  - ii. Recommendations or commentary: Indicated by words or phrases such as “should”, “may”, “it is recommended” and the like. Any such words or phrases indicate an option that is to be decided by the Designer.
- .b **Abbreviations:**
  - i. Owner: Wake County Government
  - ii. WC: Wake County
  - iii. Designer: Design professional registered to practice in North Carolina. This **shall** be an architect for the design of all-new structures, additions, and renovations or alterations to existing structures. The scope of the architect’s services **shall** include the services of professional engineers to design the structural, plumbing, mechanical and electrical portion of the project. The services of the architect may be deleted and comparable services of an engineer or landscape architect may be substituted in lieu of where a project is almost entirely within the design realm of such professionals.

ADA: The American’s with Disabilities Act

AHERA: Asbestos Hazard Emergency Response Act of 1987

ASHRAE: American Society Heating, Refrigeration, and Air Conditioning Engineers

- ASTM: American Society for Testing Materials
- BOCA: Building Officials and Code Administrators International
- HVAC: Heating, Ventilation and Air Conditioning
- ICBO: International Conference of Building Officials
- NCSBC and/or State Building Code: North Carolina State Building Code including the General, Mechanical, Electrical, Handicap and Gas Volumes.
- NEMA: National Electrical Manufacturer’s Association
- NFPA: National Fire Protection Association
- NRCA: National Roofing Contractors Association
- OSHA: U.S. Occupational Safety and Health Administration
- SBCCI: Southern Building Code Congress International
- SMACNA: Sheet Metal and Air Conditioning Contractors National Association, Inc.
- UL: United Laboratories, Inc.

**.3 Site Constraints – Work Restrictions**

- .a Comply with all site use restrictions, buffer zones, driveway entrance regulation height and location restrictions, and other site development and zoning requirements of Authority Having Jurisdiction.
- .b Provide for all work necessary to satisfy erosion control ordinances during construction. Comply with regulations of NC DENR, including air and water quality regulations.
- .c Work Restrictions to be identified by Owner. Unless indicated otherwise, renovations occurring in occupied facilities shall only occur during off hours between 7pm to 7am Monday thru Friday.

**.4 Protection of Vegetation**

- .a Unless indicated otherwise by the Owner, existing vegetation shall remain generally undisturbed during construction, except for an area five feet beyond the perimeter of the building and approved paved areas.
- .b Existing vegetation shall be protected by tree protection fencing separating the vegetation from construction activities.
- .c Vegetation shall be protected from paint-over spray and damage from trash.

**.5 Interruption of Existing Utilities**

- .a Existing utilities affecting wake County facilities may not be interrupted at any time without obtaining specific permission from the Owner

**.6 Protection of Streets, Walkways, and Drainage Systems**

- .a Existing streets, roadways, walkways, parking lots, and associated storm drainage systems shall be kept clean and protected from damage at all times. Do not allow build-up of soil on paved surfaces.

**.7 LEED Requirements**

- .a Verify with Owner whether project will seek LEED certification, and to what extent.

**.8 Construction Waste Management**

- .a Verify with Owner.

**.9 General Commissioning**

- .a Level of Commissioning varies per project and can be impacted if LEED certification is desired. Verify with owner required level of commissioning desired on a project.

**.10 Project Close-Out****.a FINAL INSPECTIONS**

- i. Each project **shall** have both a pre-final and final inspection made before it is finally accepted by the Owner.
- ii. The pre-final inspection **shall** be held with the Owner, Designer, and all Contractors and Subcontractors after all systems are in place and in operation. All contractors **shall** demonstrate to the Designer and Owner that all systems in the building are properly installed, balanced, and performing as designed and specified. The Designer will generate a final punch list from this pre-final inspection and distribute to the owner and all applicable contractors and subcontractors.
- iii. The final inspection **shall** be held with the Owner, Designer, all Contractors and Subcontractors to demonstrate to the Owner that all systems in the building are operating as designed and to their satisfaction and that all punch list items have been completed. The final HVAC inspection results **shall** be certified by design professionals.

**.b POST INSPECTIONS**

- i. A post construction inspection **shall** be held by the Designer with the Contractors and Owners prior to expiration of the 1 year warranty period. It **shall** address general construction as well as plumbing, HVAC and electrical work. All problems discovered during **this** inspection that relate to defective materials or defective workmanship **shall** be corrected by the Contractor at no additional cost to the Owner.

**.c SUBSTANTIAL COMPLETION**

- i. Substantial Completion is the date that the Owner and Designer determine the project is complete enough for the Owner to achieve beneficial occupancy. It is also the date that begins the warranty periods. Please refer to the CMAR Contract or the General Conditions Section of the Specifications, as applicable, which **will** be furnished by the Owner for detailed listing of Substantial Completion requirements.

**.d FINAL COMPLETION**

- i. Please refer to the CMAR Contract or the General Conditions Section of the Specifications, as applicable, for a detailed listing of documentation, certification and submittals required for Final Completion and Final Payment.
- ii. Refer to Owner Guideline enclosed for project closeout requirements by Designer and Contractor.

**.e CLOSEOUT CHECKLIST**

Consultant to complete applicable activities shown on Closeout Checklist and submit completed form to Owner.

**.11 Requirements for Emergency, Operation, and Maintenance Manuals**

- .a **Manuals:** The Contractors **shall** deliver three complete hard copy sets and PDF Electronic file CD of emergency, operation and maintenance manuals to the Owner through the Designer prior to requesting inspection for Substantial Completion and at least fifteen (15) days before commencing demonstration and training.
  - i. Electronic Copy: shall meet the following requirements
    - (a) Submit the manuals in the form of multiple file composite electronically-indexed PDF file for each manual required.

- (b) Use electronic files prepared by manufacturer where available.
  - (c) Where scanned documentation is required, configure scanned file for minimum readable file size.
  - (d) Enable bookmarking of individual documents based upon file names.
  - (e) Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents.
  - (f) Bookmark should reflect the system, subsystem, and equipment names in a readily navigable file tree.
  - (g) Configure electronic manual to display bookmark panel upon opening file.
- ii. Hardcopy Manual**
- (a) Binders: Heavy-duty three ringed, vinyl-covered, loose-leaf binders in thickness necessary to accommodate contents, sized to hold 8 ½" x 11" paper, with clear plastic sleeve on spine to hold label describing contents and with inside cover pockets to hold folded oversize sheets.
    - (i) If two or more binders are necessary, organize information in each binder into groupings by subsystem and related components.
    - (ii) Each binder shall be identified, on the front and spine with printed title, "OPERATION AND MAINTENANCE MANUAL", project title, subject matter of contents, and indicate Specification number on bottom of spine. If multiple manuals are required volume number shall also be identified.
  - (b) Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual.
    - (i) Mark each tab to indicate contents.
    - (ii) Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number.
  - (c) Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
  - (d) Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
    - (i) Fold oversize drawings to the same size as the text pages and use as foldouts.
    - (ii) Drawings that are too large to be used as foldouts, fold and place drawings in labelled envelopes and bind envelopes in the rear of the manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.
- iii. Manual Directory**
- (a) Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- iv. Emergency Manual**
- (a) Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- v. Product Maintenance Manual**
- (a) Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the work.
- vi. Operation Maintenance Manuals**
- (a) Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- vii. Manufacturers Data**
- (a) Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated in to the work.
- viii. Drawings**
- (a) Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record drawings to ensure correct illustration of completed installation.

**.12 Warranties**

- .a** All work shall be fully warranted for one year from the date of substantial completion by the contractor who shall replace any defective materials and repair any defective workmanship. In addition, written warranties shall be provided for the following products and time periods. These warranties shall include any material and labor cost to repair defective materials and correct defective workmanship. Refer to the following;
  - i.** 5 YEAR WARRANTY:
    - (a) Soil Termiticide Treatment
    - (b) Wood Doors
    - (c) HVAC Compressors including Refrigeration
  - ii.** 10 YEAR WARRANTY
    - (a) Glass and Glazing Materials
    - (b) FRP Door System
  - iii.** 10 YEAR NO DOLLAR LIMIT "SYSTEM" WARRANTY
    - (a) Operable Partitions
    - (b) Fluid-Applied Roofing
  - iv.** 15 YEAR NO DOLLAR LIMIT "SYSTEM" WARRANTY
    - (a) Single Ply Membrane Roofing
  - v.** 20 YEAR NO DOLLAR LIMIT WARRANTY (full twenty years by the manufacture)
    - (a) Sheet Metal Roofing (this shall include a single source, weather-tightness, warranty including coverage for: finish cracking, peeling and/or color fading)
  - vi.** 20 YEAR NO DOLLAR LIMIT "SYSTEM" WARRANTY
    - (a) Modified Bitumen Roofing
    - (b) Single Ply Membrane Roofing
    - (c) Built-Up Roofing
  - vii.** 30 YEAR WARRANTY
    - (a) Asphalt Shingle Roofing
  - viii.** Life-Time Warranty
    - (a) Solid Core Wood Doors – Warrantied for Life of Installation