

High Performance Guidelines Deliverables Checklist

TJCOG 1/16/03

1.0 Quality Management

1.1 Basic Quality Management

○ 1.1 Deliverables

- Provide a listing of the Project Lead Team with designated responsibilities of members.

Responsible party:_____

- Provide a win/win matrix which lists the definition of success versus project responsibilities for each stakeholder. (Interior cells list the needs and responsibilities of each stakeholder to others.)

Responsible party:_____

- Provide a project mission statement.

Responsible party:_____

- Provide Key Processes and Key Process Indicators; provide a list of Key Process Champions that will be responsible for the monitoring and improvements to the Key Processes.

Responsible party:_____

- Provide regularly scheduled reports on the status and improvement on the Key Process Indicators.

Responsible party:_____

1.2 Comprehensive Building Commissioning

○ 1.2 Deliverables:

- Provide a commissioning project plan.

Responsible party:_____

- Provide a commissioning report at close-out.

Responsible party:_____

2.0 Site

2.1 Erosion and Sedimentation Control

○ 2.1 Deliverables:

Declare whether the project follows state or local erosion and sedimentation control standards and provide a brief listing of the measures implemented.

Responsible party: _____

Provide the erosion plan (or drawing and specifications) with the sediment and erosion control measures highlighted.

Responsible party: _____

Provide relevant permits.

Responsible party: _____

Provide photos that show periodic inspections on soil and erosion to document “before” and “after.”

Responsible party: _____

2.2 Site Selection

○ 2.2 Deliverables:

Declare that the project site does not meet any of the prohibited criteria.

Responsible party: _____

Provide an Environmental Site Analysis.

Responsible party: _____

2.3 Redevelopment

○ 2.3.1 Deliverables:

Provide documentation of the site’s previous uses.

Responsible party: _____

Provide an area plan with the project location highlighted and the calculated development density for the project and site. Show what the increase in density will be on site or within the confines of the site’s existing infrastructure.

Responsible party: _____

○ 2.3.2 Deliverables:

- Provide documentation of the site's previous uses.

Responsible party:_____

- Provide an area plan with the project location highlighted and the calculated development density for the project and site. Show what the increase in density will be on site or within the confines of the site's existing infrastructure.

Responsible party:_____

2.4 Brownfield Redevelopment

○ 2.4 Deliverables:

- Provide a copy of the site's Brownfield Development Application.

Responsible party:_____

- Provide a letter from the local regulatory agency or regional EPA office confirming that the site is classified as an EPA Brownfield site.

Responsible party:_____

- Provide documentation demonstrating that the remediation efforts have been performed on the site to clean up or stabilize contaminants.

Responsible party:_____

2.5 Alternative Transportation

○ 2.5.1 Deliverables:

- Provide an area drawing highlighting the building location, the existing or planned trails, greenways, or bikeways, as well as fixed rail stations and bus lines; indicate the distance between them. Include a scale bar for distance measurement.

Responsible party:_____

○ 2.5.2 Deliverables:

- Provide site drawings and specifications highlighting bicycle securing apparatus and changing/shower facilities. Include calculations demonstrating that these facilities accommodate 5% or more of building occupants.

Responsible party:_____

○ 2.5.3 Deliverables:

- Provide site drawings highlighting the preferred parking for alternative vehicles.

Responsible party:_____

○ 2.5.4 Deliverables:

Provide a design narrative, parking plan, and company literature demonstrating that carpool and van pool programs serve 5% of the building occupants.

Responsible party: _____

For new projects, provide a copy of the local zoning requirements highlighting the criteria for minimum parking capacity. Provide a parking plan highlighting the total parking capacity.

OR

For rehabilitation projects, provide a pre-rehabilitation parking plan and a post-rehabilitation parking plan demonstrating that no new parking capacity was added.

Responsible party: _____

○ 2.5.5 Deliverables:

Provide drawings highlighting bike paths, sidewalks, and/or other connectors.

Responsible party: _____

2.6 Site Disturbance

○ 2.6.1 Deliverables:

Produce documentation of cultural landmark(s) on the site and provide letter from appropriate source stating that landmark(s) will remain undisturbed.

Responsible party: _____

○ 2.6.2 Deliverables:

Provide a site plan identifying tree protection, plant inventory/rescue.

Responsible party: _____

On greenfield sites, provide site drawings and specification highlighting limits of construction disturbance.

OR

On previously developed sites, provide a narrative describing restoration of degraded habitat areas. Include highlighted site drawings with area calculations demonstrating that 50% of degraded areas have been restored.

Responsible party: _____

○ 2.6.3 Deliverables:

Provide drawings and calculations highlighting the development footprint and its preservation of a minimum of 30% of the site in undeveloped space.

Responsible party: _____

○ 2.6.4 Deliverables:

- Provide drawings and calculations highlighting the development footprint and its preservation of a minimum of 40% of the site in undeveloped space.

Responsible party: _____

2.7 Stormwater Management

○ 2.7.1 Deliverables:

- For sites with 50% or less net imperviousness, provide pre-construction site drawings. Include area calculations demonstrating no increase in net imperviousness of the site.

OR

- For sites with greater than 50% net imperviousness, provide a copy of the stormwater management plan. Include calculations describing how the measures of the plan decrease net imperviousness of the site by 25% over existing conditions.

Responsible party: _____

○ 2.7.2 Deliverables:

- Provide drawings and specifications describing NC DENR Water Quality Division Best Management Practices.

Responsible party: _____

- Provide calculations to demonstrate that the NC DENR Water Quality Division Best Management Practices have been met.

Responsible party: _____

2.8 Heat Islands

○ 2.8.1 Deliverables:

- Provide absorption rates for impervious surfaces.

Responsible party: _____

- Provide drawings highlighting all non-roof impervious surfaces and portions of these surfaces that will be shaded within five years. Include calculations demonstrating that a minimum of 30% of non-roof impervious surface areas will be shaded within five years.

OR

- Provide specifications and cut sheets for high-albedo materials applied to non-roof impervious surfaces highlighting the reflectance of the installed materials.

Responsible party: _____

- Provide drawings and calculations demonstrating that these materials are furnished and installed on 30% of non-roof impervious surfaces.

OR

Provide a parking plan demonstrating that a minimum of 50% of site parking spaces are located underground.

OR

Provide drawings and cut sheet for a pervious paving system with a minimum perviousness of 50%. Include calculations demonstrating that this paving system covers a minimum of 50% of the total parking area.

Responsible party:_____

○ 2.8.2 Deliverables:

Provide specifications and cut sheets highlighting roofing materials that are Energy Star labeled, with a minimum initial reflectance of 0.65, and a minimum three-year-aged reflectance of 0.5 and a minimum emissivity of 0.9. Include area calculations demonstrating that the roofing material covers a minimum of 75% of the total roof area.

OR

Provide specifications and cut sheets highlighting a green vegetated roof system. Include area calculations demonstrating that the roof system covers a minimum of 50% of the total roof area.

Responsible party:_____

2.9 Light Pollution

○ 2.9 Deliverables:

Provide drawings and specifications that note a requirement for post-occupancy adjustments in order to balance lighting.

Responsible party:_____

Provide an exterior lighting design plan highlighting foot-candle contours and lighting fixtures. Demonstrate that the lighting plan complies with IESNA foot-candle level requirements.

Responsible party:_____

Provide drawings that show the cut-off angle of exterior lighting fixtures does not exceed 45 degrees and provide a design narrative highlighting measures that prevent reflection of light off of a structure and onto another property.

Responsible party:_____

2.10 Post-commissioning Monitoring

○ 2.10 Deliverables:

Provide a post-occupancy water quality management plan.

Responsible party:_____

Provide a summary of these Guidelines provisions that will be part of the owner's manual.

Responsible party: _____

3.0 Water

3.1 Water Efficient Landscaping

○ 3.1.1 Deliverables:

- Provide site plan noting native/drought tolerant plants.
Responsible party:_____

- On the site plan, provide calculations for 50% reduction of municipal supplied water.
Responsible party:_____

- Provide cut sheets for high efficiency irrigation equipment. Include calculations demonstrating that potable water consumption for irrigation is reduced by 50%.
OR
- Provide drawings and a narrative describing the captured rain system or recycled site water system with the capacity of the system highlighted. Include calculations demonstrating potable water consumption for irrigation is reduced by 50%.
Responsible party:_____

○ 3.1.2 Deliverables:

- Provide site plan noting native/drought tolerant plants.
Responsible party:_____

- On the site plan, provide calculations for 50% reduction of municipal supplied water.
Responsible party:_____

- Provide drawings and a narrative describing the captured rain system or recycled site water system with the capacity of the system highlighted. Include calculations demonstrating that potable water used for irrigation is reduced by 100%.
OR
- Provide a design narrative of the landscape design and describe why a permanent landscape irrigation system is not required.
Responsible party:_____

3.2 Innovative Wastewater Technologies

○ 3.2 Deliverables:

- Provide a narrative of measures implemented to reduce potable water sewage conveyance. Include calculations demonstrating that potable water sewage conveyance volumes are reduced by 50% over baseline conditions.
OR
- Provide drawings, specifications, and a narrative demonstrating that 100% of the building wastewater volume is directed to an on-site wastewater treatment system that

provides treatment to tertiary levels. Include a letter from the local health department documenting compliance with local codes.

Responsible party:_____

3.3 Water Use Reduction

○ 3.3.1 Deliverables:

Provide a chart on the plumbing drawings with actual vs. 20% better water usage noting code approved fixtures and fittings.

Responsible party:_____

Provide a water budget calculation demonstrating that occupancy based potable water consumption is reduced by 20% over baseline conditions.

Responsible party:_____

Provide cut sheets for all water consuming fixtures necessary for the occupancy use of the building, with water conservation specifications highlighted. Demonstrate that plumbing fixtures meet or exceed fixture performance requirements of the Energy Policy Act of 1992.

Responsible party:_____

○ 3.3.2 Deliverables:

Provide cut sheets for all water consuming fixtures necessary for the occupancy use of the building, with water conservation specifications highlighted. Demonstrate that plumbing fixtures meet or exceed fixture performance requirements of the Energy Policy Act of 1992.

Responsible party:_____

Provide a chart on the plumbing drawings with actual vs. 30% better water usage noting code approved fixtures and fittings.

Responsible party:_____

Provide a water budget calculation demonstrating that occupancy based potable water consumption is reduced by 30% over baseline conditions.

Responsible party:_____

○ 3.3.3 Deliverables:

Provide drawings, narrative, and calculations to show that 50% of the building's potable water is being provided through treatment of recovered rainwater.

Responsible party:_____

○ 3.3.4 Deliverables:

Provide drawings, narrative, and calculations to show that 75% of the building's potable water is being provided through treatment of recovered rainwater.

Responsible party:_____

○ 3.3.5 Deliverables:

Provide drawings, narrative, and calculations to show that 100% of the building's potable water is being provided through treatment of recovered rainwater.

Responsible party:_____

3.4 Post-commissioning Monitoring

○ 3.4 Deliverables:

Provide a post-occupancy water quality management plan and a post-occupancy monitoring schedule.

Responsible party:_____

Provide examples of water usage monitoring forms that will be part of the owner's manual.

Responsible party:_____

4.0 Energy and Atmosphere

4.1 Minimum Energy Performance

○ 4.1 Deliverables:

State whether the energy design process followed ASHRAE/IESNA 90.1-1999 or state or local energy codes. If state or local energy code was applied, demonstrate that the code is equivalent to or more stringent than ASHRAE/IESNA 90.1-1999.

Responsible party: _____

Provide a summary table of design features that minimally comply with applicable mandatory and prescriptive requirements in ASHRAE/IESNA 90.1-1999, Section 5-10, or state or local energy codes (whichever is stricter) OR a copy of the Energy Cost Budget Compliance Report.

Responsible party: _____

Provide Whole Report (not just summary page) that shows compliance with both NC Energy Code and ASHRAE 90.1-99 which is to be part of the construction document.

Responsible party: _____

4.2 CFC Reduction in HVAC&R Equipment

○ 4.2 Deliverables:

For new buildings, provide equipment schedules and cut sheet highlighting refrigerant information for all HVAC&R components.

OR

For existing buildings, provide a listing of all existing HVAC&R components and state whether each component uses CFCs. For those components that use CFCs, provide a copy of the phase-out plan describing how these components will be converted or removed and replaced with CFC-free components before construction is complete.

Responsible party: _____

Provide a narrative stating that all building materials/products/systems are CFC-free.

Responsible party: _____

4.3 Optimal Energy Performance

○ 4.3 Deliverables:

Provide a narrative highlighting energy saving measures incorporated in the building design, including an isometric of the building showing the basic floor plate shape and external projections.

Responsible party: _____

Demonstrate that the design energy cost is (20% or 30% or 40% or 50% or 60%) lower for new buildings or (10% or 20% or 30% or 40% or 50%) lower for existing buildings than the energy cost budget as defined in ASHRAE/IESNA 90.1-1999, Section 11. Provide a completed and signed copy of the Energy Cost Budget (ECB) Compliance Form.

Responsible party:_____

Pre-Design:

Schematic design energy analysis.

Responsible party:_____

Evaluation of alternative massing, orientation, layout, and envelope for above energy analysis.

Responsible party:_____

Heating and cooling load calculations for each alternative.

Responsible party:_____

Proposed HVAC system alternatives and related calculations.

Responsible party:_____

Identification of regulatory constraints.

Responsible party:_____

Design Development:

Evaluation of different central plant design alternatives based on architectural scheme and power/lighting targets.

Responsible party:_____

Evaluation of energy efficiency strategies for controlling temperature, ventilation, lighting and controls, and envelope characteristics.

Responsible party:_____

Documentation of assumptions and calculations leading to size recommendations for chillers and other equipment.

Responsible party:_____

Construction Documents:

Revised heating and cooling load calculations, and updating of analysis of selected energy efficiency measures.

Responsible party:_____

Confirm that documents conform to NC Energy Code or local code, whichever is more stringent.

Responsible party:_____

4.4 Renewable Energy

○ 4.4.1 Deliverables:

Provide drawings, cut sheets, and specifications highlighting on-site renewable energy systems installed in the building.

Responsible party:_____

Provide narrative and associated drawings to explain the renewable systems to be used in the owner's manual.

Responsible party:_____

Provide calculations demonstrating that 5% of total energy consumption is supplied by on-site renewable energy systems.

Responsible party:_____

○ 4.4.2 Deliverables:

Provide drawings, cut sheets, and specifications highlighting on-site renewable energy systems installed in the building.

Responsible party:_____

Provide narrative and associated drawings to explain the renewable systems to be used in the owner's manual.

Responsible party:_____

Provide calculations demonstrating that 10% of total energy is supplied by on-site renewable energy systems.

Responsible party:_____

○ 4.4.3 Deliverables:

Provide drawings, cut sheets, and specifications highlighting on-site renewable energy systems installed in the building.

Responsible party:_____

Provide narrative and associated drawings to explain the renewable systems to be used in the owner's manual.

Responsible party:_____

Provide calculations demonstrating that 20% of total energy cost is supplied by on-site renewable energy systems.

Responsible party:_____

4.5 Elimination of HCFCs and Halons

○ 4.5 Deliverables:

Provide a letter from the architect or engineer stating that HVAC&R systems are free of HCFCs and halon. Include equipment schedules and cut sheets highlighting refrigerant information for all HVAC&R system components.

Responsible party:_____

Provide cut sheets and equipment specifications for HCFC/halon-free suppression systems.

Responsible party:_____

4.6 Measurement and Verification

○ 4.6.1 Deliverables:

Provide a copy of the staff training manual for system operations.

Responsible party:_____

○ 4.6.2 Deliverables:

Provide an Energy Management Plan.

Responsible party:_____

○ 4.6.3 Deliverables:

Provide an International Performance Measure and Verification Protocol report that highlights the monitoring and verification process.

Responsible party:_____

Provide cut sheets of sensors and the data collection system used to provide continuous metering per IPMVP standards.

Responsible party:_____

Provide a summary schedule of the instrumentation and controls of the ten required monitoring categories, highlighting the input/output data points to be collected.

Responsible party:_____

Provide specifications for building automation system and/or metering/monitoring devices.

Responsible party:_____

4.7 Green Power

○ 4.7.1 Deliverables:

Provide a copy of the grid systems purchase contract.

Responsible party:_____

Provide documentation demonstrating that any hydro source complies with the Low Impact Hydropower Certification Program.

Responsible party:_____

○ 4.7.2 Deliverables:

Provide a copy of the two-year electric utility purchase contract for power generated from renewable sources.

Responsible party:_____

Provide documentation demonstrating that the supplied renewable power meets the referenced Green-E requirements.

Responsible party:_____

○ 4.7.3 Deliverables:

Provide calculations for energy generation and provide calculations to show power transferred exceeding 10% of the site's total yearly power consumption.

Responsible party:_____

5.0 Materials and Resources

5.1 Storage and Collection of Recyclables

○ 5.1 Deliverables:

- Provide drawings highlighting locations for collection and storage of materials separated for recycling. Indicate the path from recycling locations to the building loading dock and demonstrate that the recycling area can handle the recycling material volumes generated by building occupants.

Responsible party: _____

5.2 Building Reuse

○ 5.2.1 Deliverables:

- Provide a facility reuse feasibility study by owner.

Responsible party: _____

- Provide a demolition plan.

Responsible party: _____

- Provide “before” and “after” photos.

Responsible party: _____

- Provide a historic certificate (if applicable).

Responsible party: _____

- Provide pre-construction and post-construction plan and elevation drawings highlighting reused structure and shell elements. Include calculations demonstrating that 75% of the structure and shell was reused.

Responsible party: _____

○ 5.2.2 Deliverables:

- Provide a facility reuse feasibility study by owner.

Responsible party: _____

- Provide a demolition plan.

Responsible party: _____

- Provide “before” and “after” photos.

Responsible party: _____

- Provide a historic certificate (if applicable).

Responsible party: _____

Provide pre-construction and post-construction plan and elevation drawings highlighting reused structure and shell elements. Include calculations demonstrating that 100% of the structure and shell was reused.

Responsible party:_____

○ 5.2.3 Deliverables:

Provide a facility reuse feasibility study by owner.

Responsible party:_____

Provide a demolition plan.

Responsible party:_____

Provide “before” and “after” photos.

Responsible party:_____

Provide a historic certificate (if applicable).

Responsible party:_____

Provide pre-construction and post-construction drawings highlighting reused structure and shell and interior walls and flooring. Include calculations demonstrating that 100% of the existing building structure was maintained and that 50% of the interior walls and flooring were maintained.

Responsible party:_____

5.3 Construction Waste Management

○ 5.3.1 Deliverables:

Provide a copy of the design process checklist for construction and demolition waste reduction.

Responsible party:_____

○ 5.3.2 Deliverables:

Provide a copy of the Waste Management Plan for the project, highlighting recycling and salvage requirements.

Responsible party:_____

○ 5.3.3 Deliverables:

Provide relevant specifications and calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of grading and land clearing debris was recycled and/or salvaged.

Responsible party: _____

○ 5.3.4 Deliverables:

Provide relevant specifications and calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 50% of construction wastes were recycled or salvaged.

Responsible party: _____

○ 5.3.5 Deliverables:

Provide relevant specifications and calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.

Responsible party: _____

5.4 Resource Reuse

○ 5.4.1 Deliverables:

Provide specifications, contractor submittals, and purchase orders highlighting salvaged and refurbished materials used on the project.

Responsible party: _____

Provide calculations demonstrating that 2% of building materials were salvaged. Include the origin and cost for salvaged materials and the total cost for building materials.

Responsible party: _____

○ 5.4.2 Deliverables:

Provide specifications, contractor submittals, and purchase orders highlighting salvaged and refurbished materials used on the project.

Responsible party: _____

Provide calculations demonstrating that 5% of building materials were salvaged. Include the origin and cost for salvaged materials and the total cost for building materials.

Responsible party: _____

○ 5.4.3 Deliverables:

Provide specifications, contractor submittals, and purchase orders highlighting salvaged and refurbished materials used on the project.

Responsible party: _____

Provide calculations demonstrating that 10% of furniture, fixtures, and equipment were salvaged. Include the origin and cost for salvaged materials and the total cost for furniture, fixtures, and equipment.

Responsible party: _____

5.5 Recycled Content

○ 5.5.1 Deliverables:

Provide specification and contractor submittals highlighting recycled content building and site development materials installed.

Responsible party: _____

Provide a spreadsheet of all materials used on the project highlighting recycled content materials. Include the percentage of post-consumer and post-industrial recycled content from all recycled content materials for the project. Provide calculations demonstrating that 25% of building and site development materials have the required 20% post-consumer recycled content OR a minimum weighted average of 40% post-industrial recycled content.

Responsible party: _____

○ 5.5.2 Deliverables:

Provide specification and contractor submittals highlighting recycled content building and site development materials installed.

Responsible party: _____

Provide a spreadsheet of all materials used on the project highlighting recycled content materials. Include the percentage of post-consumer and post-industrial recycled content from all recycled content materials and the costs of all materials for the project. Provide calculations demonstrating that 50% of building and site development materials have the required 20% post-consumer recycled content OR a minimum weighted average of 40% post-industrial recycled content.

Responsible party: _____

5.6 Local/Regional Materials

○ 5.6.1 Deliverables:

Provide specifications and contractor submittals highlighting local/regional building and site development materials.

Responsible party: _____

Provide a spreadsheet of all materials used on the project highlighting regionally manufactured materials. Include the location of the material manufacturer, the distance from the manufacturer to the project site, the costs of all materials for the project, and

calculations demonstrating that 20% of building and site development materials are manufactured within 500 miles of the project.

Responsible party:_____

○ 5.6.2 Deliverables:

Provide specifications and contractor submittals highlighting local/regional building and site development materials.

Responsible party:_____

Provide a spreadsheet of all materials used on the project highlighting regionally manufactured materials. Include the location of the material manufacturer, the distance from the manufacturer to the project site, the costs of all materials for the project, and calculations demonstrating that 50% of building and site development materials are extracted, harvested, or recovered within 500 miles of the project.

Responsible party:_____

5.7 Rapidly Renewable Materials

○ 5.7 Deliverables:

Provide specifications and contractor submittals highlighting rapidly renewable materials installed.

Responsible party:_____

Provide a spreadsheet of all materials used on the project highlighting rapidly renewable materials. Include manufacturer information, the cost of all materials for the project, and calculations demonstrating that 2% of building materials are rapidly renewable.

Responsible party:_____

5.8 Certified Wood

○ 5.8.1 Deliverables:

Provide specifications and contractor submittals highlighting certified wood-based materials installed.

Responsible party:_____

Provide a spreadsheet of all wood-based materials used on the project highlighting certified wood-based materials.

Responsible party:_____

Provide wood certification documentation from the manufacturer declaring conformance with Forest Stewardship Council Guidelines for certified wood building components.

Responsible party:_____

- Provide calculations demonstrating that a minimum of 10% of wood-based materials are certified wood, according to Forest Stewardship Guidelines.

Responsible party:_____

○ 5.8.2 Deliverables:

- Provide specifications and contractor submittals highlighting certified wood-based materials installed.

Responsible party:_____

- Provide a spreadsheet of all wood-based materials used on the project highlighting certified wood-based materials

Responsible party:_____

- Provide wood certification documentation from the manufacturer declaring conformance with Forest Stewardship Council Guidelines for certified wood building components.

Responsible party:_____

- Provide calculations demonstrating that a minimum of 50% of wood-based materials are certified wood, according to Forest Stewardship Guidelines.

Responsible party:_____

5.9 Durable Materials

○ 5.9.1 Deliverables:

- Provide life cycle analysis documents.

Responsible party:_____

○ 5.9.2 Deliverables:

- Provide life cycle analysis documents.

Responsible party:_____

6.0 Indoor Environment

6.1 Minimum Indoor Air Quality Performance

○ 6.1 Deliverables:

Provide a letter from the mechanical engineer stating compliance with ASHRAE 62-1999.

Responsible party: _____

Provide documentation showing the ASHRAE 62-1999 procedure is employed in the Indoor Air Quality analysis (Ventilation Rate Procedure or Indoor Air Quality Procedure) and include design criteria and assumptions.

Responsible party: _____

Provide plans and specifications for CO monitoring system.

Responsible party: _____

6.2 Environmental Tobacco Smoke Control

○ 6.2 Deliverables:

Provide a letter from the building owner verifying the building policy prohibiting smoking. Include site drawings highlighting designated outdoor smoking areas if applicable.

OR

Provide drawings and a narrative demonstrating that designated smoking rooms have ventilation systems independent of non-smoking building areas.

Responsible party: _____

Provide a letter from the testing engineer stating compliance with ASHRAE 129-1997 for the smoking areas. Include the tracer gas analysis report as specified in ASHRAE 129-1997, Section 8.

Responsible party: _____

Provide a copy of the specifications specifying that there will be “No Smoking” signage in highly visible locations throughout the facility.

Responsible party: _____

6.3 Carbon Dioxide Monitoring

○ 6.3.1 Deliverables:

Provide drawings, specifications, and cut sheets highlighting the installed carbon dioxide monitoring system. Include a narrative describing the sequence of operation and control of building ventilation systems and initial operation set point parameters.

Responsible party:_____

- Provide plans and specifications for carbon dioxide monitoring systems, specifying outdoor and indoor sensors to check for less than or equal to 530 ppm carbon dioxide OR 1000 ppm for indoor air at any time.

Responsible party:_____

○ 6.3.2 Deliverables:

- Provide drawings, specifications, and cut sheets highlighting the installed carbon dioxide monitoring system is tied to a DDC system and document that adjustments for a more effective system will be made through a feedback loop. (6.3.2)

Responsible party:_____

- Provide carbon dioxide monitoring system maintenance schedule/ log and monitoring reports.

Responsible party:_____

6.4 Ventilation Effectiveness

○ 6.4.1 Deliverables:

- Provide copies of the test and balance reports.

Responsible party:_____

- Provide a narrative at schematic design that describes design intent and performance of the project's ventilation effectiveness.

Responsible party:_____

- For mechanically ventilated buildings, provide a report summarizing test results and calculations demonstrating that the designed building has an air-change effectiveness value of 0.9 or greater as determined by ASHRAE 129-1997, Appendix B. If E is less than 0.9, provide documentation indicating the corrected design ventilation rate (CDVR) used in the system design.

OR

- For mechanically ventilated buildings, provide a design narrative that describes compliance with the recommended design approaches in ASHRAE Fundamentals Chapter 31, Space Air Diffusion as described in the calculation details of this credit.

Responsible party:_____

- For naturally ventilated spaces, provide airflow simulation results or a flow diagram including locations of inlets, outlets, and flow patterns. Provide a narrative describing the sequence of operations of ventilation system and demonstrate that distribution and flow patterns in all naturally ventilated spaces involve at least 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.

Responsible party: _____

○ 6.4.2 Deliverables:

- Provide copies of the test and balance reports.

Responsible party: _____

- Provide a narrative at schematic design that describes design intent and performance of the project's ventilation effectiveness.

Responsible party: _____

- For mechanically ventilated buildings, provide a report summarizing test results and calculations demonstrating that the designed building has an air-change effectiveness value of 0.9 or greater as determined by ASHRAE 129-1997, Appendix B. If E is less than 0.9, provide documentation indicating the corrected design ventilation rate (CDVR) used in the system design.

OR

- For mechanically ventilated buildings, provide a design narrative that describes compliance with the recommended design approaches in ASHRAE Fundamentals Chapter 31, Space Air Diffusion as described in the calculation details of this credit.

Responsible party: _____

- For naturally ventilated spaces, provide airflow simulation results or a flow diagram including locations of inlets, outlets, and flow patterns. Provide a narrative describing the sequence of operations of ventilation system and demonstrate that distribution and flow patterns in all naturally ventilated spaces involve at least 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy.

Responsible party: _____

6.5 Construction IAQ Management Plan

○ 6.5.1 Deliverables:

- Provide a copy of the Construction IAQ Management Plan highlighting the six requirements of SMACNA IAQ Guidelines for Occupied Buildings under Construction 1995, Chapter 3.

Responsible party: _____

- Provide photographs of construction IAQ management measures such as protection of ducts and on-site stored or installed absorptive materials.

Responsible party: _____

- Provide cut sheets of filtration media used during construction and installed immediately prior to occupancy with MERV values highlighted.

Responsible party: _____

○ 6.5.2 Deliverables:

Provide a letter from the architect or engineer describing building flushout procedures, including actual dates of building flushout.

OR

Provide specifications and documentation demonstrating conformance with IAQ testing procedure and requirements as described in the referenced standard.

Responsible party:_____

6.6 Low-emitting Materials

○ 6.6.1 Deliverables:

Provide product submittal data and samples (where possible).

Responsible party:_____

Provide a cut sheet and a Material Safety Data Sheet (MSDS) for each adhesive used in the building highlighting VOC limits.

Responsible party:_____

Provide a cut sheet and a Materials Safety Data Sheet (MSDS) for each sealant used in the building highlighting VOC limits.

Responsible party:_____

○ 6.6.2 Deliverables:

Provide product submittal data and samples (where possible).

Responsible party:_____

Provide a cut sheet and a Material Safety Data Sheet (MSDS) for each paint and coating used in the building highlighting VOC limits and chemical components limits.

Responsible party:_____

Provide a cut sheet and a Material Safety Data Sheet (MSDS) for each coating used in the building highlighting VOC limits and chemical components limits.

Responsible party:_____

○ 6.6.3 Deliverables:

Provide product submittal data and samples (where possible).

Responsible party:_____

Provide a cut sheet for each carpet product used in the building documenting whether it meets or exceeds the Carpet and Rug Institutes Green Label Indoor Air Quality Text Program.

Responsible party:_____

○ 6.6.4 Deliverables:

- Provide product submittal data and samples (where possible).

Responsible party:_____

- Provide a cut sheet for each composite wood or agrifiber product used in the building highlighting urea-formaldehyde resin limits.

Responsible party:_____

6.7 Indoor Chemical and Pollutant Source Control

○ 6.7.1 Deliverables:

- Provide drawings and cut sheets highlighting entryway systems, including locations of entryways in the building.

Responsible party:_____

- Provide a narrative and drawings highlighting the deck-to-deck physical separation and independent ventilation system of chemical use areas and copy rooms.

Responsible party:_____

- Provide a narrative and drawings highlighting the plumbing system employed in chemical mixing areas.

Responsible party:_____

- Provide drawings showing separate exhausts, building sections, and plumbing lines for appropriate disposal.

Responsible party:_____

○ 6.7.2 Deliverables:

- Provide narrative for good housekeeping procedures and provide product listing and literature for good housekeeping products.

Responsible party:_____

6.8 Controllability of Systems

○ 6.8.1 Deliverables:

- Provide a copy of the systems operations manual and narrative of performance intent of the facility.

Responsible party:_____

For perimeter regularly occupied areas, provide drawings and cut sheets highlighting operable windows and lighting controls for perimeter areas of the building. Include calculations summarizing the total perimeter occupied area and number of operable windows and lighting controls.

Responsible party: _____

○ 6.8.2 Deliverables:

Provide a copy of the systems operations manual and narrative of performance intent of the facility.

Responsible party: _____

For non-perimeter regularly occupied areas, provide drawings and cut sheets highlighting airflow, temperature, and lighting controls. Include calculations summarizing the total non-perimeter occupied area; number of occupants; and number of airflow, temperature, and lighting controls.

Responsible party: _____

6.9 Thermal Control

○ 6.9.1 Deliverables:

Provide a letter from the mechanical engineer confirming that the project complies with ASHRAE Standard 55-1992, Addenda 1995. Include design criteria and assumptions for thermal comfort, including temperature, humidity, and air movement ranges.

Responsible party: _____

○ 6.9.2 Deliverables:

Provide drawings, specifications, and cut sheets highlighting the installed permanent temperature and humidity monitoring system (and DDC system). Include a narrative describing measurement points and operator interface.

Responsible party: _____

6.10 Daylighting and Views

○ 6.10.1 Deliverables:

Provide drawings with a narrative highlighting critical visual task areas and typical room sections highlighting shading devices for direct sun control.

Responsible party: _____

Include area calculations defining the daylight zone and daylight prediction calculations demonstrating a minimum Daylight Factor of 2% in these areas.

OR

Include area calculations defining the daylight simulation results demonstrating a minimum Daylight Factor of 2% in these areas.

Responsible party:_____

Provide modeling and calculations for lighting.

Responsible party:_____

○ 6.10.2 Deliverables:

Provide drawings and a narrative highlighting direct line of sight zone. Diagram the sight to vision glazing from 90% of all regularly occupied spaces. Include calculations demonstrating that 90% of these zones have direct lines of site to perimeter glazing.

Responsible party:_____

6.11 Contaminant Monitoring

○ 6.11.1 Deliverables:

Provide drawings, specifications, and narrative for an independent ozone monitoring system for the facility OR an ozone monitoring system tied to the building automation system.

Responsible party:_____

○ 6.11.2 Deliverables:

Provide drawings, specifications, and narrative for an independent radon monitoring system for the facility OR a radon monitoring system tied to the building automation system.

Responsible party:_____

○ 6.11.3 Deliverables:

Provide drawings, specifications, and narrative for an independent nitric oxide monitoring system for the facility OR a nitric oxide monitoring system tied to the building automation system.

Responsible party:_____

○ 6.11.4 Deliverables:

Provide drawings, specifications, and narrative for an independent sulfur dioxide monitoring system for the facility OR a sulfur dioxide monitoring system tied to the building automation system.

Responsible party:_____

○ 6.11.5 Deliverables:

Provide drawings, specifications, and narrative for an independent fungus and mold monitoring system for the facility OR a fungus and mold monitoring system tied to the building automation system.

Responsible party: _____

6.12 Acoustic Quality

○ 6.12.1 Deliverables:

Provide plans highlighting noisy areas and noise-sensitive areas.

Responsible party: _____

Provide narrative describing noise reduction methods for the facility including materials/systems/equipment selections as well as location of functions.

Responsible party: _____

○ 6.12.2 Deliverables:

Provide documentation confirming that the maximum decibel reading at the property line with all equipment running at the facility is 50dB(A).

Responsible party: _____

7.0 Innovation

7.1 General Innovation

○ 7.1.1 Deliverables:

Provide a narrative and supporting documents (e.g. drawings, specifications, and/or cut sheets) for innovative measure incorporated into the project. Include information that demonstrates the sustainable benefits of the measure.

Responsible party: _____

○ 7.1.2 Deliverables:

Provide a narrative and supporting documents (e.g. drawings, specifications, and/or cut sheets) for innovative measure incorporated into the project. Include information that demonstrates the sustainable benefits of the measure.

Responsible party: _____

○ 7.1.3 Deliverables:

Provide a narrative and supporting documents (e.g. drawings, specifications, and/or cut sheets) for innovative measure incorporated into the project. Include information that demonstrates the sustainable benefits of the measure.

Responsible party: _____

○ 7.1.4 Deliverables:

Provide a narrative and supporting documents (e.g. drawings, specifications, and/or cut sheets) for innovative measure incorporated into the project. Include information that demonstrates the sustainable benefits of the measure.

Responsible party: _____

7.2 Professional Training

○ 7.2.1 Deliverables:

Provide a copy of the LEED™ Accredited Professional Certificate.

Responsible party: _____

○ 7.2.2 Deliverables:

Provide a copy of Certificate of Attendance from Triangle region workshops.

Responsible party: _____

○ 7.2.3 Deliverables:

Provide a written summary of and a distribution list for the top three things three key project participants would do the same or differently on their next high performance project.

OR

Provide a technology example or case study and a distribution list.
Responsible party:_____