

LEED™ Certification and Energy Simulation Services

Prepared for

Mist Lake LEED™ Certification and Energy Simulating

1600 Mist Lake Drive

Durham, NC

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**Heery International, Inc.
Raleigh, NC**

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Overview of Services

HEERY shall provide Leadership in Environmental and Energy Design (LEED™) services for this project. This Exhibit shall be used to assist the project team to obtain LEED™ v3.0 BD+C Silver Certification. Additionally, Heery will provide all energy modeling efforts optimize the Energy Saving points and Measurement and Verification points.

These services will be performed for three facilities:

- Building 1 (approximately 92k SF) housing Administration, warehouse, shops.
- Building 2 (approximately 24k SF) housing the Equipment Maintenance Shop.
- Building 3 Regulatory Compliance (Laboratory) Building (approximately 12k SF)

Thus, three individual LEED efforts will be convened simultaneously. Each effort will include the tasks listed below.

Task 1- LEED™ Certification

HEERY shall assist the City of Durham to achieve the LEED™ certification of this project in accordance with the principles contained in the USGBC's LEED™ v3.0 BD+C rating system, and to employ the requirements established by the rating. HEERY will guide the development team in documenting the projects' environmental and energy efficiency design attributes for LEED™ credits. We will continue to update the LEED™ certification plan as changes in certification strategies change, review the project documents for compliance with LEED™ requirements, and assist the construction team with understanding their responsibilities in meeting LEED™ requirements. Included in our services are:

1.1 LEED™ Certification Guidance & Development of Certification Plan

- Provide technical and practical guidance in the selection of target credits, identification of resources for acquiring those credits, LEED™ document requirements and scopes of work.
- Assist with developing the scope for pricing associated with acquiring specific sustainable development goals by providing a description of what is required. With the description, the designers will communicate to the contractors the specifics required for pricing. HEERY can facilitate the decision process based on life cycle cost analyses where desired.

1.2 LEED™ Certification Specifications

- Provide LEED™ related guidance for specifications that the A/E will incorporate into construction specifications related to Construction Waste Management, Construction Indoor Air Quality (IAQ), and obtaining material credits.
- Provide a list of "Green Building Material" resources to assist the A/E in facilitating identification and consideration of alternative materials for inclusion into the CDs. Schedule and facilitate one 2-hour workshop for the design team to introduce construction alternatives for their consideration.

1.2 LEED™ Documentation and Submittal

- Conduct reviews of submittal documentation for LEED™ certification for format, content, and completeness. Identify any documentation gaps.
- Respond to comments from USGBC after original submission for certification, track the LEED™ certification progress, and guide in the team in the re-submittal documentation where needed. Based on our experience, only one resubmission will be required and is what our budget is based on.

1.3 Review and Calculations Services

- HEERY will conduct two reviews of the design documents and, where needed, the designers' calculations and provide the appropriate stakeholders with guidance and suggestions' concerning obtaining target credits toward LEED™ certification.
- Help develop a Measurement and Verification Plan to be implemented by the facility operator for utility consumption.
- Assist the engineer in calculation of potable water consumption calculations for the facility per the LEED methodology, and identify opportunities for the A/E to reduce volumes to the required levels.
- Verification that pre-occupancy LEED™ IAQ criteria has been met. Review, and check the contractor's materials calculations based on the contractor's estimates of material quantities and cost to assist the team in developing a strategy for reaching the specific material goals.
- Review final material calculations based on the information provided by the contractors regarding materials provided to the project. The purpose of this is to determine how successful the project team has been meeting the goals for applying green materials, and for submission to the USGBC, as part of the required documentation for selected material credits.

1.4 Registration

- Develop and maintain an electronic LEED Manual that contains all data that USGBC may ask for after initial submittals.
- Submit on line to the USGBC web site.
- HEERY will register the project for LEED™ certification with the USGBC and pay registration fees. Heery will pay for Certification application fees.
- Approved credit interpretation reviews costs will be invoiced separately at cost.

Task 1 Deliverables

Our deliverables for Task 1 outlined above are:

- LEED certification plan.
- Questions for the design/construction/owner delivery team.
- LEED specifications for Construction Waste Management, Construction Indoor Air Quality (IAQ), and obtaining material credits.
- Review of Measurement and Verification Plan for utility consumption.
- Project registration.
- Calculations, and/or calculation reviews as required for LEED points.
- CD of the submission to USGBC.

Task 2- Energy Simulations

We will develop a base case energy model based on the actual design. This model will be based on detailed information taken from the contract drawings, from operational schedules derived from the owner's program, and from submittal data where applicable.

We will develop a simulation version of the project that minimally meets ASHRAE 90.1-2007 Appendix G as required by LEED, and for comparative savings analysis.

We will develop alternative simulations for design options as needed for the team to decide on project alternative materials, systems or equipment. These alternative analyses will be used to perform alternative cost estimates and alternative life cycle analyses. With the description, the designers will communicate to the contractors the specifics required for pricing.

Develop a narrative of the energy-saving measures incorporated into the building design and illustrated by an isometric of the building provided by the A/E showing the basic floor plan shape and external projections.

Further, we will refine the energy model to match the installed project at the completion of commissioning. This will establish baseline consumption for measurement and verification of continued performance, and projected energy use for these buildings.

Task 2 Deliverables

Our deliverables for Task 2 outlined above are:

- Questions for delivery to USGBC.
- LEED energy related specifications.
- DOE2.1 energy simulations at CD and during project development to address any energy related issues. This fee is based on analysis of six options.
- Narrative, energy simulations, LEED tables, comparative data, and related submittal data for submission to USGBC for energy savings points.
- Energy simulations after commissioning for Measurement and Verification Plan and for utility consumption estimate.

Task 3- LEED Coordination Drawings

We will guide the development of coordination drawings needed to show information for Sustainable Site related points and related calculations, including:

Site selection plan (Civil engineer)

Alternative fuel vehicles and parking plan (from the City or Civil engineer)

Building footprint and site boundaries. (Civil engineer)

Vegetation, paving areas. (Civil engineer or Landscape Arch)

Bicycle racks and showers. (Civil engineer and Architect)

Site lighting (from Electrical engineer)

And others as needed

Task 4 – Assist in Architect and Engineering Coordination

Architect and engineering scope will include the additional effort for the design team to investigate alternative products and materials, and to upload required submittals and information for each design related LEED credit point. This also includes engineering and architectural calculations required for each point.

Designers must also produce the drawings necessary for each LEED credit point as listed in Task 3.