

BOD Development Assistance Document for Architectural / Engineer Design Process

This document has been prepared to assist an Architect / Engineer design team in developing the Basis of Design (BOD) documentation as specifically required for LEED Certification.

Basis of Design (BOD): (a.k.a. Design Intent Document)

Purpose-to document the reasoning and decisions made *during the design!* This document is the Designer Team's implementation of the OPR; including rationale and assumptions for calculations, decisions, schemes and systems. *It is created during schematic design and continually updated during the detailed design and construction document preparation. It is issued as a final at the end of construction.* It includes a narrative which describes the designer's approach for a general audience, including the pros and cons of various options. It also outlines and provides rationale as well as technical specifics which set the basis of the results of the design such as:

(The Content Outline given below should be addressed by discipline as applicable to an individual project)

A. PRIMARY DESIGN ASSUMPTIONS:

1. Project Background which is relevant to understanding the design, including those from the OPR which had a major influence on the design such as energy, safety, sustainability, etc.
2. References/citations from Owners Project Requirements affecting primary design decisions
3. Schedule and budget limitations which had a significant impact on the design decisions
4. Specific project scope boundaries to project (explicitly applicable to renovation projects)
5. Operational occupancy assumptions (e.g. maximum building occupancy, special occupancy patterns, usage schedule, building diversity, occupant activities, etc.)
6. Indoor Environmental Design Conditions:
 - a. Temperature, relative humidity, maximum air velocity in occupied space (drafts), outdoor air ventilation requirements, air changes per hour, space pressure (relative to adjacent spaces), etc.
7. Building System Primary Design Criteria:
 - a. Ambient conditions used during design calculations and decisions
 - b. Space-by-space equipment heat loads used in design calculations
 - c. Capacity and / or equipment redundancy, safety factors, diversities, stand-by power loads and capacities.
 - d. Discuss fuel and utility sources available at project site and identify those selected for use by project's building systems and specific reasons for fuel choices.
8. Facility management – information about how the building and its systems will be operated and maintained and by whom.

B. STANDARDS AND PROJECT GOALS:

1. List and comment on specific codes/standards, guidelines, regulations or other references (and year of publication) that will be followed during the project design and construction and any particularly pertinent impact of each.
 - a. Legal requirements such as building codes, fire and life-safety regulations, and specialized equipment or system codes.
 - b. Owner mandated requirements either in standard design guidelines or specific to particular project.



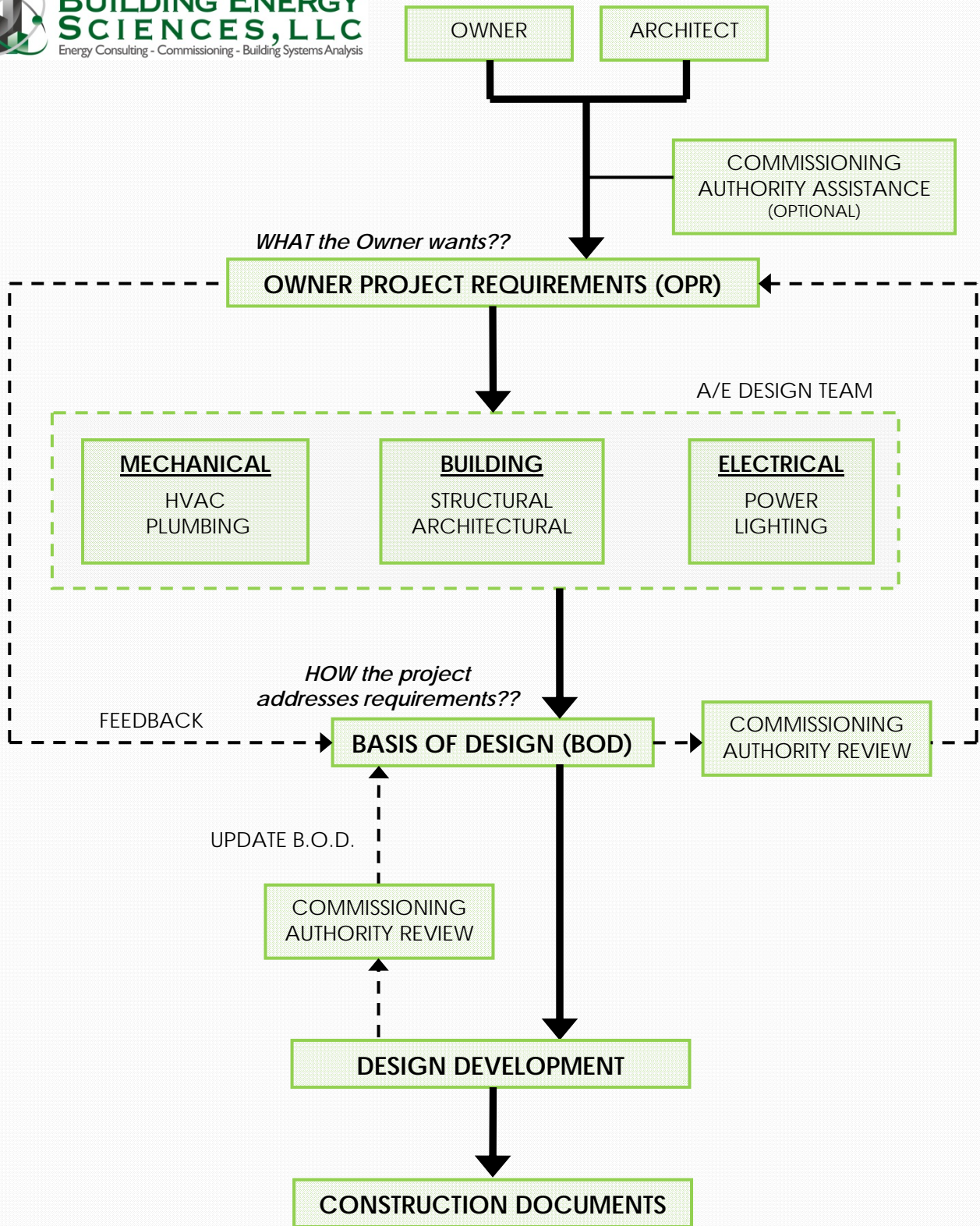
2. Criteria for Leadership in Energy and Environmental Design or other Sustainable Design goals and their affect on specific design decisions
 - a. Applicable LEED Rating system project scorecard
 - b. Comments regarding design decisions or design changes made to accommodate particular Credits of the LEED Rating system for this project.
3. Energy considerations – facility source and load energy consumption and cost goals

C. NARRATIVE DESCRIPTIONS OF DESIGN PROCESS AND DECISIONS:

1. Building envelope characteristics including type of construction, materials and methods.
2. Narrative description of each major building system:
 - a. Limiting conditions of the project on system types and locations
 - b. Why system types and locations were chosen
 - c. Discuss building hydronic systems (if applicable) considered for facility. Discussion should include which systems were selected, types of pumps, control methodology, piping system sizing criteria, and pump head sizing procedures.
 - d. Discuss air distribution systems planned for facility including duct systems, plenum construction, air flow control strategies, fan system type, methodology for sizing duct systems, and fan static pressure sizing procedures.
3. Architectural and structural interface issues relevant to overall building or systems design
4. Heating and cooling system component design demands and excess capacity capabilities
5. Building Automation System types, control schemes, and philosophy behind the sequences
6. Important design and O&M considerations
7. Reference to specific design methods, techniques, analytical procedures and software used in design. Actual calculation input / output to be included in appendices only of Final Basis of Design.

D. APPENDICES:

1. Copies of input and output of analytical procedures or software used in design.



PROJECT DEVELOPMENT PROCESS

LEED Documentation Requirements