

SECTION 01 13 01 – DESIGN GUIDELINES FOR SUSTAINABILITY – GENERAL

1.1 SUMMARY

- A. All projects shall comply with the net zero pledge (Brown standard 01 13 00) and follow the high-performance design process to guide project design and equipment/system selection. The Office of Sustainability & Resiliency (OS&R) is available to assist design and construction teams through the process.
- B. New construction and major renovation projects shall be designed and constructed to be at least LEED Silver compliant. LEED Scorecards shall be compiled by a certified LEED professional. Submission for award is not required. The LEED process is important to innovation in sustainability, therefore LEED compliance beyond LEED Silver is highly encouraged.
- C. All category 1 new construction and category 2 and 3 comprehensive renovation projects will be assigned a target site energy use (EUI) index (kBtu/ft²) prior to the budget being set for the project.
 - 1. The Office of Sustainability & Resiliency and Facilities Planning will work together to establish the initial target site EUI. Associated information needed for the basis of design (e.g. operating hours, space condition requirements, and associated operational and design elements) will also be defined. Any restrictions to the use of utility upstream equipment incentives will be confirmed.
 - 2. Building modelling shall be used to validate the design meets target site EUI at each major milestone in project development. The construction team shall provide all relevant documentation to the modelling consultant in a timely fashion (e.g. design drawings, submittals, and associated contract and construction related documents). Once the target EUI is established, any adjustments to the target site EUI requested during design development must be reviewed by the Office of Sustainability & Resiliency and approved by the Project Principals.
 - 3. A final target site EUI must be set and finalized by completion of 30% design development drawings.
 - 4. Following completion of the project, site metering shall be used to validate the actual site EUI based on the first full year of occupied energy use.
- D. For projects not covered in paragraph C above, energy performance must be considered for all materials and equipment that affect building energy use, including equipment/materials affecting building shell performance. Prior to approval of the project budget, preliminary life cycle cost analyses shall be performed for all potential energy savings enhancement. All enhancements that lead to lower life cycle cost shall be included and budgeted for in the proposed project budget. Budgeted enhancements must remain in scope and may not be eliminated due to budget constraints or project overruns. Any utility incentives related the project must be paid to Brown (i.e. no upstream incentives).
- E. For renewal projects including maintenance replacements, no equipment may be “replaced in kind” without examining and adjusting system size (rating) to an appropriate level and reducing use of fossil fuels where possible. For example, a

renewal chiller replacement should prompt review on appropriate chiller sizing and possible replacement of the chiller with a heat pump if it will offset the use of fossil fuels.

- F. Scope 3 Embodied Carbon Considerations for all category 1 new construction and category 2 comprehensive renovation projects: Brown University strives to utilize materials with lower embodied carbon than traditional materials wherever possible and feasible within the project budget, such as low carbon cement, cross laminated timber, mass timber, recycled steel and others. Brown University may elect to increase the project budget to allow for lower embodied carbon materials. These alternative lower-carbon materials are to be considered at the planning and design phases of new major construction projects. In order to facilitate decisions on the lower-carbon material alternatives the Architect and/ or their associated sub-consultants are to provide an estimate of embodied carbon for the base-design materials, potential for carbon reduction using different materials, and end of life opportunities, costs, and geographic data for those different materials. At the end of the Design Development phase, or pending the finalization of the lower-embodied carbon materials review process, the Architect shall provide a final model of the total embodied carbon for the project and benchmark this data point to at least three non-Brown University projects of the similar size and complexity.
- G. All design specifications for category 1 new construction and category 2 comprehensive renovation projects are to specifically require the Contractor and associated Subcontractors to provide Environmental Product Declarations (EPD's) for all materials.
- H. Recognizing that tropical deforestation is one of the primary threats to biodiversity on the land, Brown University does not permit the specification or purchase of tropical hardwoods for use on Brown projects. In certain very rare circumstances there may be adequate justification for the use of tropical hardwoods for certain design elements where durability and longevity cannot be met through alternative materials. In such a rare instance, the Architect shall bring the deviation to Brown's attention. If the deviation is acceptable to the University, the Architect shall include language in the product specifications that the wood material shall be FSC certified and sustainably forested, with a Design and Construction Standards Waiver required at the time of acceptance.
- I. Project commissioning following ASHRAE/IES Standard 202 is required for all new construction, major renovation, and retrofit projects involving energy consuming equipment. The installation contractor and all appropriate sub-contractors shall be available and present as needed during commissioning activities at no further costs to Brown. All costs for commissioning related activities shall be included in construction proposals. Commissioning documentation shall include verification of input/output control points and programming logic as well as calibration of field devices. Commissioning shall be performed by an independent third-party. Commissioning agent shall be involved throughout the planning, design, and construction process to include the following phases:
 - a. Commissioning Team Development
 - b. Planning and Predesign
 - c. Design Phase - Submittal/Progress Review
 - d. Construction Phase

- e. Acceptance Phase - Verification of Performance (Functional Performance Testing)
- f. Warranty Phase

End of Section