Basis of Design

- This section applies to testing, adjusting, and balancing (TAB) of building mechanical systems. The following are design requirements.

Design Criteria

- Generally, for large projects with $3 million Maximum Allowable Construction Cost (MACC) or greater, TAB services are provided by the Contractor as part of the construction contract commissioning service.
  1) For small projects with less than $3 million MACC, the UW will hire the balancer directly under a separate contract.
  2) For projects that do not include full scope commissioning, the UW contracts separately for the testing, adjusting, and balancing (TAB) firm.

- The designer must give special consideration to the TAB process during the design. The TAB technician must be able to test and analyze the particular installation so that he can properly balance the system to obtain the greatest system efficiency and comfort level. It is important that balancing capability be designed into the system.

- On systems with variable frequency drives (VFD) the fan and pump design performance shall be accomplished with the VFD operating at 55 to 58 HZ.

- Specify that Testing Adjusting and Balancing will be performed in accordance with current NEBB or AABC requirements. Balancers must be affiliated by qualification with NEBB or AABC.

Design Evaluation

The following information is required to evaluate the design:

- **Programming Phase**: Provide a description of the scope of balancing activities to include new and existing systems. Describe any balancing activity required prior to demolition/renovation of existing systems.

- **Schematic Design Phase**: Indicate primary duct traverse locations where airflow measurements are required for pre-demolition.

- **Design Development Phase**: Provide an outline of specifications to include a preliminary description of the scope of balancing activities.

- **Construction Document Phase**: Provide a final specification to include a final description of the scope of balancing activities.

Construction Submittals

Balance Report submittals

Preliminary submittal

- Draft report for review by the A/E, Commissioning Agent, and UW Engineering Services that includes the following:
  a) A list of items which will prevent the balancer from providing a full and complete balance.
  b) Narratives that describe all problem areas that may require major construction or design changes.
Testing, Adjusting, and Balancing

c) Narratives that describe the building systems and control systems to demonstrate comprehension of system operation, including system diversity.

d) The balancing agenda which reiterates the scope of the balancing work and the intended order of activity.

e) Sample balancing data sheets

Final submittal

- Certified Testing Adjusting and Balancing report that includes the following:
  a) Completed balancing data sheets.
  b) Drawings annotated to indicate inlet and outlet numbering that corresponds to the balancing data sheets.
  c) Narratives that describe the building systems and control systems including system diversity.
  d) Narrative description of those items not conforming to the contract requirements.

Installation, Fabrication and Construction

- On projects where the UW hires the balancer under a separate contract, the Design Consultant must specify the scope of Testing, Adjusting, and Balancing in the project contract documents. Specify the Contractor’s responsibility to provide construction support for the UW-hired balancer.

- On projects where the TAB is part of Commissioning and/or otherwise provided by the Contractor, the Design Consultant must specify the scope of Testing, Adjusting, and Balancing in the project contract documents.

END OF DESIGN GUIDE SECTION