

## Architectural and Engineering Basic Services Fee Estimating Guidelines

Basic Services is the design work customary on a typical project to take an established building program, site, and budget, and then develop the architectural design, engineer the building systems, produce construction documents, and perform construction administration for a single phase project. Basic Services include the design services customary on every project such as architectural, structural, civil, mechanical, and electrical engineering services. Basic Services are described in the Standard Consulting Agreement.

The following method estimates the Basic Services fees using the Amount Available for Construction (AAC) from the established project budget. The fees are expressed as percentage of AAC for six (6) projects types with differing levels of complexity for both New Construction and Renovation. The Project Types are:

**Project Type I – Considerably Less than Average Complexity:** Farm Structures, shop & Maintenance, Service, Warehouses, Storage Facilities, Parking Structures.

**Project Type II – Less Than Average Complexity:** Student Housing, Office Buildings, Complex Parking Structures.

**Project Type III – Average Complexity:** Classroom Facilities, General Teaching Spaces, Medical Offices, Clinics, Gymnasias.

**Project Type IV – More Than Average Complexity:** Complex University Buildings, Engineering Laboratories, University Libraries, Dining Facilities, Theaters, Arenas, Auditoriums, Medical Schools.

**Project Type V – Considerably More than Average Complexity:** Science and Medical Research Buildings, Hospitals, Museums.

**Project Type VI – Engineering Projects:** Campus/Building Chilled Water, Steam, Fire Protection, or Hot Water Systems; Campus/Building Electrical Distribution Systems; Building Replacement Mechanical or Electrical Systems; Building or Campus Generator Systems; Campus Fire Alarm or Security Systems; Outdoor Lighting or Sports Lighting; Retrofit Building Fire Protection Systems; Campus Voice/Data Systems. Power & steam generating capacity projects are not included. The fees for projects at Power Plants, projects involving high voltage electrical distribution, projects involving steam distribution over 15 psi or new major chiller plants shall be determined by current market conditions.

To use the chart, find the row corresponding to the project's AAC, then find the column best describing the project type. The intersection of the row and column is the percentage of the AAC that is a reasonable estimate of a Basic Services Fee for that project. Fees are then stated as a Lump Sum Amount. When the project AAC is greater than \$30,000,000, contact UM Facilities Planning & Development.

The application of these tables is dependent on understanding the size and complexity of the project. It is assumed the project scope of work and budget has been developed to a level where this method can be used to produce an estimate of a reasonable and customary fee.

Consultant Fees to prepare Design/Build proposal documents are estimated using the Basic Services curves and then factored for the level of bridging documents required. For example bridging through Design Development would be factored by 35%. Services for proposal package preparation, responding to questions during the proposal phase, proposal evaluation services, and construction administration support are then added as not to exceed fees estimated based of the level of effort anticipated.

Not included in the Basic Services Fee are amounts to cover Additional Services or approved Reimbursable Expenses. These costs should be added to the Total Project Budget and should be estimated based on the projected scope of work.

Additional Services are those required to augment the Basic Services that are not customary on every project. The need for Additional Services is dependent on the individual project and will change from project to project. Some of these services will not be identified until the project is underway. However, it is preferable for needed additional services to be identified when requesting services for design.

#### Additional Services

Additional Services include, but are not limited to those listed below. It is desirable that these be identified with the basic services fees and approved at the same time.

#### Pre-Design Phase

- Feasibility Studies/Analysis
- Assistance with Grant and Funding Applications
- Facility Programming
- Master Planning
- Soils Investigations/Reports/Geotechnical Services
- Surveys-Topographic/Boundary/Vegetation Improvements/Utilities
- Existing Facilities Analyses
- Measured Drawings of Existing Facilities
- Environmental Assessments
- Storm Water Management Permitting
- Environmental/Site Permitting
- Traffic Analyses
- Hazardous Materials Consultation/ Surveys

## Design Phase

- Additional Project Meetings [in Excess of Biweekly]
- Accelerated Design Schedules
- Engagement of a Signature Design Architect
- Engagement of Specialty Expert Consultants for consultation on design parameters, such as Food Service, Historic Preservation, Theater, Acoustical, Audio/Visual, Landscape, Life Safety, Laboratory, Way-finding graphics, Interior Design, Furnishings, & Artwork
- Coordination with Consultants Engaged Directly by the Owner
- Site Specific Seismic Studies
- LEED Process Support and Documentation
- Electrical Fault Current Studies
- Load Studies (Mechanical or Electrical)
- Reliability Analysis (Mechanical or Electrical)
- Value Analyses / Life Cycle Cost Analyses (beyond that required under basic services)
- Computer Modeled Energy Analyses (other than required by University Energy Standards)
- Renderings/Models/Videos
- Owner directed Changes to Scope, Size, or Complexity
- Documents Prepared for Multiple Component Construction Packages
- Documents Prepared for Separate Proposal Packages Requested by the Owner
- Environmental Work (Hazardous Waste Consultant Hired by Design Professional)

## Construction Phase

- Comprehensive CPM Scheduling
- Phased Construction Observation
- Prequalification of Contractors/ Subcontractors Services
- Commissioning
- Commissioning Support
- Full Time Construction Inspection Provided by the Design Professional
- Program Management Services
- Designing Replacement Work for Damaged Work
- Post Occupancy Observations/Evaluations

**ARCHITECTURAL & ENGINEERING BASIC SERVICES FEE PERCENTAGE NEGOTIATION GUIDELINES**

| Amount Available for Construction<br>(\$) | TYPE I<br>Considerably less than average complexity |         | TYPE II<br>Less than average complexity |         | TYPE III<br>Average Complexity |         | TYPE IV<br>More than average complexity |         | TYPE V<br>Considerably more than average complexity |         | TYPE VI<br>Engineering Projects |         |
|---|---|---------|---|---------|--------------------------------|---------|---|---------|---|---------|---------------------------------|---------|
|   | New %   | Reno. % | New %                                   | Reno. % | New %                          | Reno. % | New %                                   | Reno. % | New %   | Reno. % | New %                           | Reno. % |
| 500,000                                   | 6.4   | 8.0     | 7.2                                     | 9       | 8                              | 10      | 8.8                                     | 11      | 9.6   | 12      | 9                               | 11.2    |
| 750,000                                   | 6.1   | 7.6     | 6.8                                     | 8.6     | 7.6                            | 9.5     | 8.4                                     | 10.5    | 9.1   | 11.4    | 8.5                             | 10.6    |
| 1,000,000                                 | 5.8   | 7.3     | 6.6                                     | 8.2     | 7.3                            | 9.1     | 8                                       | 10      | 8.8   | 11      | 8.2                             | 10.2    |
| 1,250,000                                 | 5.7   | 7.1     | 6.4                                     | 8       | 7.1                            | 8.9     | 7.8                                     | 9.8     | 8.5   | 10.7    | 8                               | 10      |
| 1,500,000                                 | 5.6   | 7.0     | 6.3                                     | 7.9     | 7                              | 8.8     | 7.7                                     | 9.7     | 8.4   | 10.5    | 7.9                             | 9.8     |
| 1,750,000                                 | 5.5   | 6.9     | 6.2                                     | 7.8     | 6.9                            | 8.7     | 7.6                                     | 9.5     | 8.3   | 10.4    | 7.8                             | 9.7     |
| 2,000,000                                 | 5.5   | 6.9     | 6.2                                     | 7.7     | 6.9                            | 8.6     | 7.5                                     | 9.4     | 8.2   | 10.3    | 7.7                             | 9.6     |
| 2,250,000                                 | 5.4   | 6.8     | 6.1                                     | 7.7     | 6.8                            | 8.5     | 7.5                                     | 9.4     | 8.2   | 10.2    | 7.6                             | 9.5     |
| 2,500,000                                 | 5.4   | 6.7     | 6.1                                     | 7.6     | 6.7                            | 8.4     | 7.4                                     | 9.3     | 8.1   | 10.1    | 7.5                             | 9.4     |
| 2,750,000                                 | 5.3   | 6.7     | 6                                       | 7.5     | 6.7                            | 8.4     | 7.3                                     | 9.2     | 8.0   | 10      | 7.5                             | 9.4     |
| 3,000,000                                 | 5.3   | 6.6     | 6                                       | 7.4     | 6.6                            | 8.3     | 7.3                                     | 9.1     | 7.9   | 9.9     | 7.4                             | 9.3     |
| 3,500,000                                 | 5.3   | 6.6     | 5.9                                     | 7.4     | 6.6                            | 8.2     | 7.2                                     | 9       | 7.9   | 9.9     | 7.4                             | 9.2     |
| 4,000,000                                 | 5.2   | 6.5     | 5.9                                     | 7.4     | 6.5                            | 8.2     | 7.2                                     | 9       | 7.8   | 9.8     | 7.3                             | 9.2     |
| 4,500,000                                 | 5.2   | 6.5     | 5.9                                     | 7.3     | 6.5                            | 8.1     | 7.2                                     | 8.9     | 7.8   | 9.8     | 7.3                             | 9.1     |
| 5,000,000                                 | 5.2   | 6.5     | 5.8                                     | 7.3     | 6.5                            | 8.1     | 7.1                                     | 8.9     | 7.8   | 9.7     | 7.2                             | 9       |
| 6,000,000                                 | 5.1   | 6.4     | 5.8                                     | 7.2     | 6.4                            | 8       | 7.1                                     | 8.8     | 7.7   | 9.6     | 7.2                             | 9       |
| 7,000,000                                 | 5.1   | 6.4     | 5.7                                     | 7.2     | 6.4                            | 8       | 7                                       | 8.8     | 7.7   | 9.6     | 7.1                             | 8.9     |
| 8,000,000                                 | 5.1   | 6.3     | 5.7                                     | 7.1     | 6.3                            | 7.9     | 7                                       | 8.7     | 7.6   | 9.5     | 7.1                             | 8.9     |
| 9,000,000                                 | 5.0   | 6.3     | 5.7                                     | 7.1     | 6.3                            | 7.9     | 6.9                                     | 8.7     | 7.6   | 9.5     | 7.1                             | 8.8     |
| 10,000,000                                | 5.0   | 6.3     | 5.6                                     | 7       | 6.3                            | 7.8     | 6.9                                     | 8.6     | 7.5   | 9.4     | 7                               | 8.8     |
| 11,000,000                                | 5.0   | 6.2     | 5.6                                     | 7       | 6.2                            | 7.8     | 6.8                                     | 8.6     | 7.5   | 9.3     | 7                               | 8.7     |
| 12,000,000                                | 4.9   | 6.2     | 5.6                                     | 7       | 6.2                            | 7.7     | 6.8                                     | 8.5     | 7.4   | 9.3     | 6.9                             | 8.7     |
| 13,000,000                                | 4.9   | 6.1     | 5.5                                     | 6.9     | 6.1                            | 7.7     | 6.8                                     | 8.4     | 7.4   | 9.2     | 6.9                             | 8.6     |
| 14,000,000                                | 4.9   | 6.1     | 5.5                                     | 6.9     | 6.1                            | 7.6     | 6.7                                     | 8.4     | 7.3   | 9.2     | 6.8                             | 8.5     |
| 15,000,000                                | 4.8   | 6.1     | 5.5                                     | 6.8     | 6.1                            | 7.6     | 6.7                                     | 8.3     | 7.3   | 9.1     | 6.8                             | 8.5     |
| 16,000,000                                | 4.8   | 6.0     | 5.4                                     | 6.8     | 6                              | 7.5     | 6.6                                     | 8.3     | 7.2   | 9       | 6.7                             | 8.4     |
| 17,000,000                                | 4.8   | 6.0     | 5.4                                     | 6.7     | 6                              | 7.5     | 6.6                                     | 8.2     | 7.2   | 9       | 6.7                             | 8.4     |
| 18,000,000                                | 4.8   | 5.9     | 5.3                                     | 6.7     | 5.9                            | 7.4     | 6.5                                     | 8.2     | 7.1   | 8.9     | 6.7                             | 8.3     |
| 19,000,000                                | 4.7   | 5.9     | 5.3                                     | 6.6     | 5.9                            | 7.4     | 6.5                                     | 8.1     | 7.1   | 8.9     | 6.6                             | 8.3     |
| 20,000,000                                | 4.7   | 5.9     | 5.3                                     | 6.6     | 5.9                            | 7.3     | 6.4                                     | 8.1     | 7.0   | 8.8     | 6.6                             | 8.2     |
| 21,000,000                                | 4.7   | 5.8     | 5.2                                     | 6.5     | 5.8                            | 7.3     | 6.4                                     | 8       | 7.0   | 8.7     | 6.5                             | 8.1     |
| 22,000,000                                | 4.6   | 5.8     | 5.2                                     | 6.5     | 5.8                            | 7.2     | 6.4                                     | 7.9     | 6.9   | 8.7     | 6.5                             | 8.1     |
| 23,000,000                                | 4.6   | 5.7     | 5.2                                     | 6.5     | 5.7                            | 7.2     | 6.3                                     | 7.9     | 6.9   | 8.6     | 6.4                             | 8       |
| 24,000,000                                | 4.6   | 5.7     | 5.1                                     | 6.4     | 5.7                            | 7.1     | 6.3                                     | 7.8     | 6.8   | 8.6     | 6.4                             | 8       |
| 25,000,000                                | 4.5   | 5.7     | 5.1                                     | 6.4     | 5.7                            | 7.1     | 6.2                                     | 7.8     | 6.8   | 8.5     | 6.3                             | 7.9     |
| 26,000,000                                | 4.5   | 5.6     | 5.1                                     | 6.3     | 5.6                            | 7       | 6.2                                     | 7.7     | 6.7   | 8.4     | 6.3                             | 7.9     |
| 27,000,000                                | 4.5   | 5.6     | 5                                       | 6.3     | 5.6                            | 7       | 6.1                                     | 7.7     | 6.7   | 8.4     | 6.2                             | 7.8     |
| 28,000,000                                | 4.4   | 5.5     | 5                                       | 6.2     | 5.5                            | 6.9     | 6.1                                     | 7.6     | 6.6   | 8.3     | 6.2                             | 7.8     |
| 29,000,000                                | 4.4   | 5.5     | 5                                       | 6.2     | 5.5                            | 6.9     | 6.1                                     | 7.6     | 6.6   | 8.3     | 6.2                             | 7.7     |
| 30,000,000                                | 4.4   | 5.5     | 4.9                                     | 6.1     | 5.5                            | 6.8     | 6.0                                     | 7.5     | 6.6   | 8.2     | 6.1                             | 7.6     |

