# DESIGN GUIDELINE 2.5
# PROJECT ESTIMATES

## General

The procedures described in this section pertain to University of Michigan construction projects with a construction cost of $500,000 or more. Though it is not required, it is suggested that the consultant or contractor follow these procedures on the smaller project, as well.

For projects with a construction budget of $10 million or greater, Design Professionals are required to benchmark at least 3 similar projects. The benchmark information will be submitted utilizing the Design Professional Cost Benchmarking Submission form. A Project Data Sheet is included with the form and shall be completed for **each** project that is benchmarked. The benchmarking information will be submitted in tandem with the program phase estimate.

Professionals performing estimating services for Architecture, Engineering and Construction (AEC) are mandated to use the following standard estimating formats.

- *Program Phase:* (Uniformat II) - Estimate Uniformat2.xlsx
- *Schematic Design through Construction Document Phases:* (CSI-2012) - Estimate CSI 2012.xlsx
- NOTE: CSI 2012 = Construction Specifications Institute, April 2012 "*Masterformat*" Specification Categorization

Professionals may complete these templates as provided, optionally using additional "tabs" for more specific levels of detail. NOTE: The Level 1 Summaries are entirely populated with data from the Level 2 Breakdowns. The professional estimator may opt to use proprietary software, provided that the "CSI and Uniformat 2 Level 1 Summaries" and "CSI and Uniformat 2 Level 2 Breakdowns" are formatted to accurately match the AEC templates. In both type estimates, the respective detail sheets relating to the Level 2 Breakdown and thus, the Level 1 Summary, must accompany the estimate and relate specifically to the CSI Masterformat categorizations of which they are intended to be a part. No modification or deviations from the Level 1 template will be allowed. Any advantageous or project-specific changes to the Level 2 template must be submitted to, in writing, and be approved by the AEC Design Manager or Construction Manager, prior to the creation of the estimate.

These templates have been created as "standards" for University of Michigan Project Cost estimate. Compliance with the intent of these templates are a mandate, not an option.

UM Hospitals and Health Centers (UMHHC) projects are exempt from these requirements and shall utilize the standard estimating format template found on the UMHHC Facilities Planning and Development web page.

**Execution**

Cover Sheet

Every estimate document shall be accompanied by a Cover Sheet or Sheets which include the following information:

- University of Michigan Building Name; Project Name; Brief Project Scope Description; University Project Number
- A List of Documents showing all documents used or referenced as the basis of the estimate. These documents shall include all the following accompanied by their listed dates:
  - Plans
  - Specifications
  - Sketches
  - Gross Area Summaries
  - Site Areas
  - Addendums
  - Meeting Notes
  - Schedules, etc.
- A List of Allowances showing either Lump Sum or Unit Price allowances included within the "*FIXED LIMIT OF CONSTRUCTION COST*".
- Construction start and completion dates upon which the estimate is based.
- A detailed basis used for escalation calculations, i.e., "midpoint of construction".
- A List of Exclusions from the "*FIXED LIMIT OF CONSTRUCTION COST*", examples of which might be
  - Abatement
  - HazMat Removal
  - Utility Services Upgrades (not yet defined)
  - Connection Fees
  - Permit Fees
  - Owner-supplied Equipment
  - Moveable Furniture
  - Testing Fees, etc.
- A List of Clarifications relating to:
  - Incomplete Documents
  - Unusual Circumstances
  - Mitigation of Obvious Document Errors or Inconsistencies
  - Specific Exclusions
  - Allowances, etc.

Templates: Line-Specific Information

CSI & Uniformat 2 **Level 1 Summaries**:

The first portion of the Summary, "*CONSTRUCTION TRADES SUBTOTAL*", [Sections A-G, Uniformat II and 00 00 00 – 33 00 00, CSI 2012] should account for all known direct labor and materials costs based upon applicable local market conditions at the time of the estimate. As noted on the last line of the Level 1 Summary, "*This template includes pre-set formulas,*

*however, estimating professionals are ultimately responsible for the accuracy of the information submitted.*"

The second portion of the Summary, "*TOTAL CONTINGENCY; ESCALATION &; GENERAL CONDITIONS COSTS*", should account for Design Contingency, Escalation, General Conditions, Management Fees, Indirect Costs and Profit. These costs will totaled separately and added to the "*CONSTRUCTION TRADES SUBTOTAL*", to form the "*FIXED LIMIT OF CONSTRUCTION COST*". Separate categories for "*ALLOWANCES*" and "*ALTERNATES*" will be listed and totaled separately. If applicable to the project, these optional costs may then be added to the "*FIXED LIMIT OF CONSTRUCTION COST*" to form the "*TOTAL UPPER LIMIT OF G.M.P.*".

CSI & Uniformat 2 **Level 2 Breakdowns**:

The first eight rows of the Breakdown comprise the input areas of strategic project descriptors, i.e., Project Name, Gross Building and Site areas and Relevant Project Timeline Dates, for use in calculations throughout this worksheet. This section populates the parallel cells on the Level 1 Summary.

For the CSI 2012 estimate, the second section of note is category number "*01 00 00 – GENERAL REQUIREMENTS*". The values of the categories within this breakdown parallel the cost inputs named in the section entitled "*TOTAL CONTINGENCY; ESCALATION & GENERAL CONDITIONS COSTS*", below the "*CONSTRUCTION TRADES SUBTOTAL*". The estimator will populate both of these sections at their own discretion, defining the cost components to produce an accurate total cost for these items. The University expects that estimator will utilize both quantifiable values for specific items or, amounts equaling a historical percentage of the "*CONSTRUCTION TRADES SUBTOTAL*". The estimator will assure that the aggregate costs represented in these two categories do not overlap and represent an accurate portrayal of the expected "*01 00 00 – GENERAL REQUIREMENTS*" costs. This is the same expectation for both General Contract and Construction Management projects.

For the Uniformat 2 estimate, the "*GENERAL CONDITIONS COSTS*" will be carried as an historical percentage of the "*CONSTRUCTION TRADES SUBTOTAL*".

The second section of this Breakdown comprises the categorical summations of the quantities and costs as described in the CSI 2012 *Masterformat* Numbers and Titles. Each line has only two "input" cells, the "*QUANTITY*" and the "*TOTAL DOLLARS*", both of which comprise the automatically-calculated "*AVG PRICE*". Specifically named for each *Masterformat* category, is the "*UNIT*" of measure in which the estimator will describe his "*QUANTITY*" input. [*Outside the right margin of the cost calculation data is a description of each abbreviated "UNIT" of measure*]

The third section of this Level 2 Breakdown comprises the source calculations for the difference between the "*CONSTRUCTION TRADES SUBTOTAL*" and the "*FIXED LIMIT OF CONSTRUCTION COST*". The definitions of the line item descriptions contained therein follow.

- *Design Contingency* – A suitable allowance of cost, based on a "percentage" of the "*CONSTRUCTION TRADES SUBTOTAL*", for items or options not yet fully-designed and which may be incorporated as the design progresses. Typical historical percentages are:

Schematic Design +10%; Design Development +5%; Construction Document +0% to 1%, based on the completeness of the CD documents on which the estimate is based.

- *Escalation* – A suitable percentage of the "*CONSTRUCTION TRADES SUBTOTAL*", based on generally-anticipated cost increases between the date of the estimate and the scheduled Midpoint of Construction. Escalation factors may include: anticipated rates of "Inflation" or local "Market Conditions" affecting the cost of construction. [*Category-specific, anticipated cost increases, due to factors like material or labor shortages, should be accounted for within each specific category number and be noted as such*]
- *Escalation Calculation*: Is defined by the formula: ((1+Annual Rate of Escalation), raised to the power of (Total Days from the estimate date to the midpoint of construction, divided by 365.25 days)) minus 1. This calculation is a mandate, not an option.
- *Escalation Example*: 460 days @ 3% per year: ((1+.03) ^ (460/365.25))-1 = 3.79%. This is the University standard for the calculation of escalation for all projects.
- *CM or GC General Conditions*: These construction-support related costs are described in category number "*01 00 00 – GENERAL REQUIREMENTS*". These costs may be based on a historical percentage at the Schematic Design phase, a combination of quantifiable costs and historical percentages at the Design Development Phase and completely-defined quantifiable costs at the Construction Document / Bid Phase.
- *CM/GC Personnel*: Cost for management staff, during the construction, as described in category number "*01 00 00 – GENERAL REQUIREMENTS*". [*This may include project managers, superintendents, project engineers and estimators*]
- *CM Fee/GC Profit*: Construction Management Company Fee or General Contractor's overhead and profit.
- *Pre-construction Services*: A fee for construction management support prior to commencement of construction. [*This is not applicable to General Contractor project delivery*]
- *CM Contingency*: An agreed-upon percentage of the "*CONSTRUCTION TRADES SUBTOTAL*" for mitigation of unforeseen conditions and other unanticipated costs that may occur during construction. [*This is not applicable to General Contractor project delivery*]
- *Related Construction Cost Allowances*: These costs are identifiable, essential Construction Cost items which may be paid directly by the University, be outside of the contract, or be added to the contract by the University. When these costs are carried as line items within the "*CONSTRUCTION TRADES SUBTOTAL*", they should be identified as "*Related Construction Costs*" of the overall project budget. Beyond the Programming Phase these line items should be moved to "*Related Construction Cost Allowances"*, thus lowering the "*FIXED LIMIT OF CONSTRUCTION COST*". Items in this category should be coordinated with the AEC Design Manager.
- Examples of *Related Construction Cost Allowances* are:
  - University Connection Fees
  - Utility Tie-in Costs and Fees
  - Sidewalk Closures
  - Project-specific Testing, etc.
- When these costs are carried as line items within the "*CONSTRUCTION TRADES SUBTOTAL*", they should be identified as "*Related Construction Costs*" of the overall project budget. Beyond the Programming Phase these line items should be moved to "*Related Construction Cost Allowances"*, thus lowering the "*FIXED LIMIT OF*

*CONSTRUCTION COST*". Items in this category should be coordinated with the AEC Design Manager.

- *Alternates*: Are individual, independent "*FIXED LIMIT OF CONSTRUCTION COSTS*" for stipulated "Add" or "Deduct" construction items, based on the "*CONSTRUCTION TRADES SUBTOTAL"* for each alternate and the "*TOTAL CONTINGENCY; ESCALATION &; GENERAL CONDITIONS COSTS*", as included in the overall project "*FIXED LIMIT OF CONSTRUCTION COST*".

The CSI 2012 and Uniformat 2 estimate formats are the standard for University of Michigan cost estimate of equal or greater value than $500,000. No modifications to these formats shall be made without the express written approval of the Design Manager or Construction Manager.