FEASIBILITY STUDIES – ACTION YEAR – LONG FORM
GUIDELINES FOR NEW CONSTRUCTION AND RENOVATION PROJECTS

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FEASIBILITY STUDY FOR NEW CONSTRUCTION

DETAILED PROJECT CONSIDERATIONS

A. Program

1. Program space entitlements by discipline per COBCP.
2. Room summary with total ASF in each discipline and proposed use of total GSF.
3. Program requirements relative to electrical power/lighting/HVAC/central plant capacity/telecom/sustainability and specialized group I & II equipment.
4. Review and confirm code assumptions for building occupancy, exit density, and construction code type with CPDC at the conceptual stage. Code assessment of allowable building types, exiting, and combined uses such as residential and assembly, boilers and chillers in a shared central plant space, assembly spaces located above second floors, and roof terraces can add substantially to State Fire Marshal (SFM) review complexity. Buildings as low as 250 to 500 occupants trigger specific SFM and seismic issues. The next triennial building code revision will occur in 2019; the code cycle applicable to new construction will be determined by the date of the schematic review submittal.
5. Justification for requested space that exceed CSU space standards.

B. Schedule and Cost Estimate

1. Review and coordinate the project timeline schedules for all project phases based on the delivery method.
2. Evaluate the phased time schedules for reasonable and achievable completion.
3. Determine cost implications of schedule delays and/or revised completion and occupancy. Mitigate schedule risks by planning for achievable schedules rather than relying on liquidated damages.
4. Provide justification for any variations from the CPDC cost guide.
5. Include an owner's schedule contingency at the end of the construction period equivalent to 10 percent of the contract schedule.
6. Use the Capital Outlay Estimate (CPDC form 2-7) and the Uniformat Component Summary (CPDC form 2-7.5) to provide overall project schedule and cost data as derived from a supporting cost estimate. Include a copy of the cost estimate with CCCI noted.
7. Design Contingency: Direct design teams to include a 5-10 percent design contingency in the feasibility study for projects of $5-50 million and a 10 percent contingency for larger projects.
8. Identify all contingencies held by campus and contingencies directed to design teams.

C. Building – Conceptual Design

1. Include a scheduled 50 percent Schematic review with the State Fire Marshal to determine required fire safety/exiting.
2. Review the proposed height and massing of building to determine conformance with the campus Master Plan, design guidelines and the campus concurrence with location, site adaptation, and visual impact.
3. Schedule an early Seismic Review Board (SRB) review of the recommended structural system to confirm that it will satisfy design criteria, program requirements, flexibility, and possible expansion. Where project conjoins an existing structure, determine the extent of special structural analysis required to evaluate design alternatives.

4. Determine SRB Geotechnical Values to be used for soil test to support choice of foundation and structural system. Provide Geotechnical Report listing seismic and geotechnical constraints.
5. Provide costs for at least two alternative exterior claddings. The type and approximate area of exterior cladding should be calculated for first cost and life cycle cost analysis.
6. Provide a minimum of two viable roofing system alternatives. Compare first cost and life cycle cost analysis.
7. Develop a minimum of two viable Alternative HVAC systems following MRB guidelines.
8. Flat roofs should be evaluated for the potential for photovoltaic systems (PV). Where PV cannot be roof mounted, identify compliance method to satisfy CBC PV building requirements.
9. Mechanical equipment (excluding elevators) shall be screened or accommodated within the building shell and considered in the life cycle cost. Note: Interior area of equipment penthouse is counted in building ASF.
10. An extra elevator should be evaluated, depending upon building height and function.
11. Geographical factors that may affect cost such as topography, availability of contractors and cost of construction in the area, are to be considered and documented.
12. Identify specific sustainability design measures that will be incorporated into the scope of the project, consistent with the 2014 CSU Sustainability Policy.

D. Site

1. Identify and locate campus utilities. Indicate where additional verification of utilities on- and off-site are required. Identify connections to utilities/central plant and include estimated utilities costs to be shared or carried by the project.
2. Identify any critical infrastructure to be addressed in coordination with campuswide Utility Infrastructure Master Plan.
3. Identify additional estimated costs if utility relocation or major extension is required.
4. Identify unique site constraints, size and shape of site and laydown area, location of existing buildings, pedestrian detours, delivery and service access.
5. Identify ADA site access improvements/path of travel plan. Coordinate with campus Accessibility Master Plan. Identify required parking improvements, relocations or closures.
6. Identify specific sustainability design, GHG reduction measures that will exceed CBC code compliance and/or be incorporated in the site work of the project. Indicate consistency with CSU sustainability guidelines. Indicate if project will secure outside group sustainably endorsement (I.e. LEED, Well Building, etc.).

E. Construction

1. Contractor's access to site and lay-down area should be determined and cost estimated or allocated for the ease/difficulty of construction in general conditions.
2. Maintenance of Fire Department and pedestrian access on campus during construction should be determined and costs estimated or allocated.
3. Identify that there may be construction management tracking of sustainability measures.
4. Identify other factors contributing to higher than average costs for general conditions which should be addressed in a narrative including: compressed schedule; high liquidated damages; hazardous materials; non-CSU utility relocations; phased construction; destructive testing; etc.

FEASIBILITY STUDY FOR RENOVATIONS

DETAILED PROJECT CONSIDERATIONS

A. Program

1. List existing building deficiencies based on the programmatic needs of academic or instructional support activities.
2. Describe the extent to which renovations will address projected program needs, technology enhancements and capacity increases in the building.
3. Review and confirm code assumptions for building occupancy, exit density and construction code type with CPDC at the conceptual stage. Code assessment of allowable building types, exiting, and combined uses such as residential and assembly, boilers and chillers in a shared central plant space, assembly spaces located above second floors, and roof terraces can add substantially to State Fire Marshal (SFM) review complexity. Buildings as low as 250 to 500 occupants trigger specific SFM and seismic issues. The next triennial building code revision will occur in 2019; the code cycle applicable to proposed renovations will be determined by the date of the schematic review submittal.
4. Subject to Seismic Review Board (SRB) review, determine the extent of seismic interaction with existing structural systems and special structural analysis required to evaluate design alternatives.
5. Reference the amount of deferred maintenance due to lack of renovation of the existing building systems. Indicate previous actions taken by the campus to repair/upgrade.
6. Provide existing and proposed room summary with total ASF/FTE in each discipline/use.

B. Schedule and Cost Estimate

1. Review and coordinate the project timeline schedules for all project phases based on the delivery method.
2. Evaluate the phased time schedules for a reasonable and achievable completion.
3. Determine cost implications of schedule delays and/or revised completion and occupancy.
4. Provide justification, with back up, for any variations from typical renovation costs at 67 percent of the current cost guide.
5. Provide a cost comparison between the proposed project and feasible alternatives.
6. Use the Capital Outlay Cost Estimate (CPDC form 2-7) and the Uniformat Component Summary (CPDC form 2-7.5) to provide overall project schedule and cost data as derived from a supporting cost estimate with CCCI noted as an attachment.
7. Design Contingency: Campuses are encouraged to include a 15 percent design contingency in the feasibility study for projects of $3-30 million and 10 percent for larger projects.

C. Building

1. Indicate historical energy costs for this building and complete GHG assessment (Form 1-4.5).
2. For HVAC systems upgrades, identify alternate designs evaluated, projected energy and operational cost savings, and payback period including life cycle cost analysis.
3. Digital control systems should replace all legacy pneumatic control systems.
4. Discuss coordination and phasing with other capital outlay projects.

5. Provide test results for hazardous materials in building structures, identify all proposed penetrations in internal and external walls and estimate abatement costs. Destructive/investigative testing should be completed as necessary.
6. Plumbing and other utilities should have conditions verified. Field investigation should include destructive/investigative testing and verification.
7. Electrical supply, transformer capacity and power distribution systems should be checked for adequacy. Identify laboratory and computer equipment power and cooling requirements.
8. Identify any special power management requirements (clean or uninterrupted power).
9. Identify if Seismic Code per CBC Chapter 34 will be triggered by renovations exceeding 25 percent of building replacement cost. If applicable, evaluate budget implications.
10. Identify ADA requirements triggered by this renovation and related compliance costs, include any reductions in capacity.
11. For phased demolition/construction describe plan for relocation/surge space.
12. Identify specific sustainability design, GHG reduction measures that will exceed CBC code compliance and/or be incorporated in the building renovation or site work of the project, consistent with the CSU 2014 Sustainability Policy. Indicate if project will secure outside group sustainably endorsement (I.e. LEED, Well Building, etc.).

D. Site

1. For major renovations or building additions, identify and locate campus utilities. Indicate where additional verification of utilities on- and off- site are required. Identify connections to utilities/central plant and include estimated utilities costs to be shared or carried by the project.
2. Identify any critical infrastructure to be addressed in coordination with campuswide Utility Infrastructure Master Plan.
3. Identify additional estimated costs if utility relocation or major extension is required.
4. Identify unique site constraints, size and shape of site and laydown area, location of existing buildings, pedestrian detours, delivery and service access.
5. Identify ADA site access improvements/path of travel plan. Coordinate with campus Accessibility Master Plan. Identify required parking improvements, relocations or closures.
6. Identify specific sustainability design, GHG reduction measures that will exceed CBC code compliance and/or be incorporated in the site work of the project. Indicate consistency with CSU sustainability guidelines. Indicate if project will secure outside group sustainably endorsement (I.e. LEED, Well Building, etc.).

E. Construction

1. Contractor's access to site and lay-down area should be determined and cost estimated or allocated for the ease/difficulty of construction in general conditions.
2. Maintenance of Fire Department and pedestrian access on campus during construction should be determined and costs estimated or allocated.
3. Identify that there may be construction management tracking of sustainability measures.
4. Any other factors prompting a higher than average percent for general conditions should be addressed in a narrative, e.g., phasing, surge space, precedent activities.

Campuses are strongly encouraged to retain Seismic Review Board (SRB) and Mechanical Review Board (MRB) advisors at the onset of project programming and development.

All feasibility studies should be reviewed by a MRB member and SRB member, as applicable. There is no cost to the campus for feasibility reviews by the MRB/SRB.

Information regarding the MRB can be accessed at:
http://calstate.edu/CPDC/ae/review/mechanical_systems.shtml.

Information regarding the SRB can be accessed at:
http://calstate.edu/CPDC/ae/review/seismic_peer.shtml.