FEASIBILITY STUDIES – ACTION YEAR
GUIDELINES FOR NEW AND RENOVATION PROJECTS

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5. **Building Considerations, Analysis & Description**

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Height & Massing	Construction Phasing
Structural	Energy Use Projections/ AB32
Mechanical	Construction Phasing
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6. **Alternatives**
   Alternative approaches to meet program needs: alternative sites, orientation, phasing, scale, construction materials, joint use and secondary effects.

7. **Project Cost Estimate**
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   Cost comparison with alternatives
   Analysis of variances from the CSU guidelines
   Comparison of building systems life cycle cost analyses
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8. **Conceptual Project and Site Design Drawings**

9. **Environmental Responsibility: CALGREEN / LEED Silver Project Summary**

DETAILED PROJECT CONSIDERATIONS FOR NEW CONSTRUCTION

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. Justify all requested space that exceed CSU space standards.

B. Building

1. Height and massing of building to determine the floor area ratio and visual impact.
2. Recommended structural system based on program requirements for spaces, flexibility and possible expansion.
3. Soil test to support choice of foundation and structural system. Provide Geotechnical Report listing seismic and geotechnical constraints.
4. Provide costs for two alternative exterior claddings. The type and approximate area of exterior cladding should be calculated for first cost and life cycle cost analysis.
5. Roofing material cost should be calculated for first cost and life cycle cost analysis.
6. Alternative HVAC systems should be determined and life cycle cost analyses should be performed.
7. Flat roofs should be evaluated to maximize the potential for photovoltaic systems. Mechanical equipment (excluding elevators) should be enclosed or accommodated within the building shell and considered in the life cycle cost. Note: Interior area of equipment penthouse is counted in building ASF.
8. An extra elevator should be evaluated, depending upon building height and function.
9. Geographical factors that may affect cost are to be considered, such as climate, topography, foliage, community interface and cost of construction in that area.
10. Identify specific sustainability design measures that will be incorporated into the building scope of the project. Use CALGREEN / LEED Silver as a guide.

C. Site

1. Location of utilities to be determined, including verification of utilities on- and off-site if required, with connections to utilities/central plant to be estimated for cost.
2. Additional estimated costs if utility relocation or major extension is required.
3. Other site information and constraints should be considered: size and shape of site, location of existing buildings, lay-down area, pedestrian detours and service access.
4. ADA site access improvements/path of travel plan. Required parking improvements.
5. Identify specific sustainability design measures that will be incorporated in the site work of the project. Indicate information using CALGREEN / LEED Silver as a guide.

D. 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.

E. Cost Estimate

1. Use the UniFormat Component Summary (CPDC form 2-7.5) to provide overall project cost data as derived from a supporting cost estimate. Include a copy of the cost estimate with CCCI noted.
2. Provide justification for any variations from the 2013-2014 cost guide.
3. Design Contingency: Architects are directed to include a 15 percent design contingency in the feasibility study for projects of $3-30 million and a 10 percent contingency for larger projects.

DETAILED PROJECT CONSIDERATIONS FOR RENOVATIONS

A. Program

1. List existing building deficiencies based on the programmatic needs of academic or instructional support activities.
2. Identify the extent to which building occupants would be at risk for health, life and safety without systems upgrades, including seismic structural safety and exiting.
3. Describe the extent to which renovations will address projected program needs, technology enhancements and capacity increases in the building.
4. Reference the campus Pacific Partners Study and document adverse effects due to lack of renovation of the existing building systems. Indicate previous actions taken by the campus to repair/upgrade.
5. Provide existing and proposed room summary with total ASF in each discipline/use.

B. Building

1. Indicate historical energy costs for this building and overall energy consumption.
2. For HVAC systems upgrades, identify alternate designs evaluated, projected energy and operational cost savings, and payback period including life cycle cost analysis.
3. Discuss coordination and phasing with other capital outlay projects.
4. 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.
5. Plumbing and other utilities should have conditions verified. Field investigation should include destructive/investigative testing and verification.
6. Electrical supply, transformer capacity and power distribution systems should be checked for adequacy. Identify laboratory and computer equipment power and cooling requirements.
7. Identify any special power management requirements (clean or uninterrupted power).
8. Identify if Seismic Code (California Building Code Chapter 34, Sections 3415 – 3420) will be triggered by renovations exceeding 25 percent of building replacement cost.
9. Identify ADA requirements triggered by this renovation and related compliance costs (restrooms, signage, elevators, path of travel, door swings, door knobs, sprinklers, computer lab heights, equal access to each kind of work station, turn around space in labs), Include any reductions in capacity.
10. If construction is to be phased, describe how power and air are going to be supplied to the occupied parts of the building.
11. Identify specific sustainability design and construction measures that will be incorporated into the building and site of the project. Use CALGREEN / LEED Silver as a guide.

C. 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.

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D. Cost Estimate

1. Use the Component Summary (CPDC form 2-7.5) in UniFormat to provide overall project cost data as derived from a supporting cost estimate. Include a copy of the cost estimate as an attachment.
2. If appropriate, provide the cost benefit to the state for a phased versus complete renovation; include leasing costs for accommodating occupants temporarily and costs for extended general conditions and overhead to phase construction. Include impacts to the academic program.
3. Provide justification, with back up, for any variations from typical renovation costs at 65 percent of the 2013-2014 cost guide.
4. Design Contingency: Architects 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.

All feasibility studies should be reviewed by a Mechanical Review Board (MRB) member and Seismic Review Board (SRB) member, as applicable. There is no cost to the campus for feasibility reviews by the MRB.

Information regarding the MRB can be accessed at:
http://www.calstate.edu/CPDC/AE/mech_systems_review_agreements.shtml.

Information regarding the SRB can be accessed at:
http://www.calstate.edu/CPDC/AE/seismic_contracts.shtml.