

## 2.5.2. SCHEMATIC DESIGN PHASE CHECKLIST (Preliminary Design: 35% Completion)

### Outline

1. General
2. Architectural
3. Civil
4. Structural
5. Mechanical
6. Electrical
7. Telecommunications
8. Code/Permits
9. Equipment
10. Cost

### 2.5.2.1 General

1. Program for the principal areas.
2. Regional area characteristics, site features: natural and man-made.
3. Vehicular and pedestrian circulation.
4. Agency needs.
5. Refer also to "Specification Requirements" Section 3.1 in this Manual.
6. Complete the "Checklist for Permits, Certifications and Approvals" (DPW form #330).
7. Modify Division 1 "General Requirements" (in short or long form) as a draft.
8. Design concepts for the mitigation measures described in any environmental document.
9. Any environmental document shall be reviewed to ensure that all agreed mitigation measures have been incorporated in the drawings and specifications.

### 2.5.2.2 Architectural

1. Refer to "Cultural Resources" (Historical & Archaeological), Section 2.4.2 of this Manual if the building is considered on the State Historical listing.
2. Floor Plans (1/16", 1/8", 1/4" scale or as required), must indicate overall dimensions and square feet area of each floor.
3. Elevations (sufficient to delineate the design).
4. Sections (sufficient to delineate the design), include large scale sketches, as required, to illustrate the design.
5. Approximate grade elevations.
6. Indicate floor-to-floor dimensions.
7. Indicate Fire classification (ref. "Building Information Form" DPW form #311).
8. Outline specifications, & Supplementary General Conditions.
9. Pedestrian access and circulation.
10. Parking and vehicular circulation.
11. Energy conservation measures.
12. Handicapped accessibility
13. Study model (large projects & when requested).
14. Trash removal/recycling provisions
15. Show Telecommunication, Mechanical and Electrical rooms.

### 2.5.2.3 Civil

1. Site or plot plan with sufficient contour lines or spot elevations to describe existing conditions and the footprint of the proposed building/s, orientated in the same direction as all other project drawings. Show past outline of foundation if previous demolition.

2. Locations of all existing utilities as per survey.
3. Comply with "Subsurface Investigation" requirements, (boring logs on plans, and sewage disposal system investigations where applicable).
4. Methods and design of the storm water management facilities and methods of disposal of sewage.
5. Source of water supply.
6. Location of roads, parking areas, existing buildings.
7. Type of subsoil, adjacent property problems if any.
8. Survey to comply with "Boundary and Topographic Survey" Section 2.3.6 in this Manual.
9. A copy of the original survey is to be included either as a base for the proposed work or as a separate drawing.
10. Proposed new underground utilities shall be shown.
11. Calculation/location of required parking spaces for disabled persons.
12. Method of Soil Erosion and Sediment Control.
13. Location of all wetlands and watercourses.

### **2.5.2.4 Structural**

1. Proposed type of structural system with relation to indicated use-group and construction classification and design loads.
2. Any special or unusual uses or conditions anticipated.
3. Seismic requirements for additions, alterations or repairs must be physically separated from existing buildings or resolved by options as indicated in paragraph 2.5.0.8, the "Forward" of Project Phases in this Manual.
4. All live loads and concentrated loads, including values of components in formulas for snow, wind and seismic forces.

### **2.5.2.5 Mechanical**

1. Prepare Life Cycle Cost Analysis determination form with heating and cooling "Block" loads.
2. Floor Plans must show locations for equipment rooms, boiler rooms, and main duct shafts. Show locations for main duct and piping runs. Also, show water, gas, storm and sanitary entry points with inverts. Use of felt marker on architectural schematic drawings is acceptable.
3. Verification from utility companies that peak anticipated demand (pressure and volume) for gas and water can be provided.
4. Indicate flow diagrams for air and water systems, including major components.
5. Identify all existing major equipment or systems to be reused as part of renovation work.
6. Outline specifications: use CSI Section numbers and identify basic materials and equipment.
7. Supplemental narrative that describe the mechanical and plumbing systems.
8. Indicate the type of temperature control system to be used.
9. Indicate the minimum number of required plumbing facilities, and any special plumbing.

### **2.5.2.6 Electrical**

1. Initial contact with electrical utility company (NU or UI) regarding source of power, type of distribution, fees for connections, etc. Refer also to Utility Connections/Easements.

2. Outline new Energy Savings Systems and/or upgrades. Refer to "Energy Issues" Section 2.4.4 of this Manual.
3. Identify proposed site and/or building voltage distribution, i.e., 4160, 277/480, 120/208) and anticipated loads.
4. Identify types of lighting, both interior and exterior, including light levels, types of lamps, ballasts, etc.
5. Identify special systems, i.e., emergency lighting, fire alarm, standby power generation, paging, CATV, CCTV, security, etc.
6. Identify existing systems and major equipment to be re-used in renovation work.
7. Identify main switchgear room and auxiliary electrical rooms on architectural floor plans.
8. Submit outline specifications with CSI section numbers, and identify basic materials, equipment and systems.
9. Provide telecommunications requirements as in "Telecommunications" Section 2.5.2.7 in this Manual.
10. Consider use of peak load shave and co-generation with standby generator.
11. Add special energy savings lighting controls where practical.
12. Renovation work: verify scope of work with DPW and agency. Visit site to confirm scope.

### 2.5.2.7 Telecommunications

1. Identify source of incoming Telephone Service, i.e., SNET, agency, overhead, underground, etc. See Telecommunications.
2. Identify location of BMDF and IDF rooms on architectural drawings.
3. Identify proposed method of horizontal and vertical raceway and cable distribution for voice and data communication systems.
4. Identify whether installation of voice and data wiring is or is not part of the contract.

### 2.5.2.8 Code/Permits

#### Codes

The need for Modification to code requirements shall be identified and submitted by the A/E at the schematic design phase.

1. Complete the "Building Information Form" (DPW form #311) and include the information on the drawings. (do not include in the specs- the drawings are DPW's record for all projects)
2. Submit "ICC Plan Review Record" worksheets for buildings that exceed the threshold limit only, or as directed by DPW. Forms may be obtained on [www.iccsafe.org](http://www.iccsafe.org) Refer to "Code Review" Section 2.4.1 of this Manual for a definition of "threshold limit".
3. Submit occupant/plumbing calculations from State Plumbing Code requirements.
4. The plans must indicate all rooms/spaces that has an occupant load of 50 or more persons. The total occupant load for each floor shall be indicated on the floor plans. Separate plans with occupancy loads may be included, if the main floor plan drawings are complex.

#### Permits

1. The checklist shall be submitted with the schematic design phase to the DPW designated Project Manager for all DPW Projects. Copies of the Checklist are to be sent to DPW Environmental Planning and DPW Code Services.
2. Prior to submitting a Checklist, the consultant shall ensure he is using the latest Checklist version by checking on DPW's website ([www.ct.gov/dpw](http://www.ct.gov/dpw)) under "Forms".
3. For projects requiring a DEP Inland Water Resources application, make request to the designated DPW PM and Environmental Planning that the project be on DPW's DEP Project Priority List.

4. For more detailed information regarding the Checklist and permit policies, refer to "DPW Procedures for DEP Permit Applications" Section 2.3.5

### **2.5.2.9 Equipment**

1. No requirements at this submission.

### **2.5.2.10 Cost Estimate**

1. The program for design shall be prepared that is within the approved budget amount. If the design appears not to be within the budget amount, the A/E shall suggest alternative approaches to reduce the cost without major revisions to the program.
2. Square or cubic unit cost estimates are acceptable at the schematic phase of the design.