Building Services Engineering Design Guidelines

A summary of the major building services design tasks is given below. It is hoped that the information will guide the students to develop the design solutions in a systematic and effective manner.

1. **Analysis of Site Environment**

   - Investigate site access and circulation
   - Examine surrounding buildings and neighbourhood settings
   - Study climatic conditions, ventilation, air quality and noise impacts
   - Identify the locations of utility connections (electricity, water, drainage, towngas, telecomm)

2. **Study of Client Requirements**

   - Identify client requirements and major project goals
   - Evaluate any constraints and limitations
   - Study design requirements and criteria (for building services systems)
   - Identify the scope of building services provisions
   - Indicate any feasibility or further studies required

3. **Key Building Services Systems**

   - Design objectives and design criteria
   - Relevant local regulations and design practices
   - System description and design features (specific to this project)
   - Possible design options and system selection

4. **Conceptual Design and Outline Proposals**

   - Conceptual diagrams and simplified schematics
   - Load estimation (rough) and possible zoning
   - Arrangement of utility connections (obtain authority approval, if needed)
   - Planning of major plant rooms and services distribution

5. **Scheme Design and Construction Method**

   - Identify plant room locations and building services space requirements
   - Coordinate with architectural and structural designs
   - Determine the main routings of the services distribution
   - Consider construction method and cost implications

6. **Teamwork and Coordination**

   - Collaboration and interaction with other disciplines
   - Feedbacks of other IDDP team member(s) on critical design issues
   - Economic analysis of design options

7. **Innovation and Creativity**

   - Technical analysis of important design issues (e.g. safety, energy efficiency, sustainability)
   - Proposal of innovative and sustainable design features