



## Knowledge and Skills/Tasks Required of Landscape Architects that Affect the Health, Safety, and Welfare of the Public

### Knowledge

#### Natural and Cultural Systems

- 1.1.1 Land information sources
- 1.1.2 Patterns of land use and built form
- 1.1.3 Natural site conditions and ecosystems
- 1.1.4 Social and cultural influences on design
- 1.1.5 Regional hazard design considerations

#### Design and Planning Theories and Methodologies

- 1.2.1 Creativity and process including design theory and problem-solving strategies
- 1.2.2 Aesthetic principles of design
- 1.2.3 Human factors such as behavior, perception, psychological and sensory response
- 1.2.4 Natural factors such as ecological relationships
- 1.2.5 Relationship between human and natural systems such as resource conservation, habitat restoration and creation, and urban ecology
- 1.2.6 Influence of context on design, planning, and management decisions
- 1.2.7 Research methods including data collection, interpretation, and application of results
- 1.2.8 Therapeutic aspects of design
- 1.2.9 Communication and education methods, including sharing knowledge and evaluating outcomes

#### Public Policy and Regulation

- 1.3.1 Governmental policies and laws that affect the use and development of land
- 1.3.2 Political and regulatory approval processes
- 1.3.3 Emerging trends and issues

#### Design, Planning and Management at Various Scales and Applications

- 1.4.1 Photogrammetry and remote sensing
- 1.4.2 Visual resource assessment
- 1.4.3 Agricultural and rural landscape analysis
- 1.4.4 Urban landscape
- 1.4.5 Planning principles including regional community and neighborhood planning
- 1.4.6 Conservation of natural resources
- 1.4.7 Ecological planning principles
- 1.4.8 Water resource management
- 1.4.9 Wetland management
- 1.4.10 Floodplain management
- 1.4.11 Land and water reclamation procedures including quarry, mine and landfill reclamation

#### Site Design and Engineering: Materials, Methods, Technologies and Applications

- 1.5.1 Design needs for special populations
- 1.5.2 Accessibility regulations
- 1.5.3 Roadway design principles
- 1.5.4 Elements of vehicular and pedestrian circulation systems and their design requirements
- 1.5.5 Landscape maintenance techniques, materials, equipment, and practices
- 1.5.6 Noise attenuation and mitigation techniques
- 1.5.7 Sustainable construction practices



- 1.5.8 Construction equipment and technologies
- 1.5.9 Grading, drainage and stormwater treatment
- 1.5.10 Biofiltration and other alternative drainage methods
- 1.5.11 Erosion and sedimentation control
- 1.5.12 Utility systems
- 1.5.13 Irrigation systems
- 1.5.14 Lighting systems
- 1.5.15 Structural considerations
- 1.5.16 Characteristics of plant material (e.g. size, shape, texture, color, hardness, moisture and soil requirements)
- 1.5.17 Factors influencing selection of plant materials (e.g., availability, cost, maintenance, location, survivability, dependability)
- 1.5.18 Typical construction details and site amenities (e.g. fasteners, finishes, benches, kiosks, waste receptacles, pools and fountains, playground equipment, decks, walls, and overhead structures)
- 1.5.19 Factors influencing selection of site construction materials (e.g. availability, costs, characteristics, applications)

#### **Construction Documentation and Administration**

- 1.6.1 Quality control procedures for construction, such as delivery, storage, testing, etc.
- 1.6.2 Sequencing of design, approval, permitting, and construction activities
- 1.6.3 Geographic coordinate systems and layout techniques and conventions
- 1.6.4 Specification types and components for a project
- 1.6.5 General and supplemental conditions, special provisions, and technical specifications and their organizations
- 1.6.6 Construction administration and details
- 1.6.7 Basic construction law
- 1.6.8 Construction contracts

#### **Communication**

- 1.7.1 Determination of user values such as focus groups and surveys
- 1.7.2 Consensus and team building
- 1.7.3 Techniques for conducting meetings
- 1.7.4 The roles of visual communication, including photographic and video documentation
- 1.7.5 Graphic presentation techniques, systems and symbols
- 1.7.6 Public relations, outreach, and image development

#### **Values and Ethics in Practice**

- 1.8.1 Environmental ethics
- 1.8.2 Social responsibility in design
- 1.8.3 Resolving moral and ethical dilemmas

## **Tasks**

#### **Problem Definition**

- 2.1.1 Tasks associated with the development of the problem statement including goals, objectives, purpose, need, and expected outcomes.
- 2.1.2 Elicit clients' intentions and determine needs
- 2.1.3 Elicit users' intentions and determine needs
- 2.1.4 Develop project parameters (e.g. problem statement, goals, objectives, purpose, needs, expected outcomes)

#### **Inventory**

- 2.2.1 Tasks associated with information gathering, defining information needs, or research, including characteristics of the sites (e.g. survey, soil sample, photograph, GIS, codes) or natural, social, visual, political, historical, cultural, and archeological considerations
- 2.2.2 Determine data needed and identify sources of data (e.g. consultants, agencies, publications)



- 2.2.3 Collect inventory data (e.g., context, demographics, infrastructure, site conditions)
- 2.2.4 Conduct and/or coordinate field investigations
- 2.2.5 prepare inventories (e.g., vegetation, cultural systems, natural systems, visual systems, plant communities)
- 2.2.6 Identify relevant laws, rules, regulations, ordinances and covenants governing the project (e.g., accessibility codes; building codes)
- 2.2.7 Identify required approvals (e.g. regulatory, lender, agency, owner)
- 2.2.8 Prepare base plans and/or maps
- 2.2.9 Research and identify potentially hazardous areas (e.g. fire hazard areas, slope instability, contaminated soil, flooding, avalanche)
- 2.2.10 Facilitate community input in participatory meetings (e.g. workshops and public meetings)

### **Analysis**

- 2.3.1 Tasks associated with determining applicability of information or interpreting information as it relates to the problem
- 2.3.2 Evaluate natural site conditions and ecosystems (e.g., slopes, wetlands, soils, vegetation, climate)
- 2.3.3 Evaluate social and cultural conditions (e.g. land uses, occupancy and existing buildings)
- 2.3.4 Analyze legal and regulatory constraints
- 2.3.5 Analyze surrounding land uses
- 2.3.6 Determine the opportunities and the constraints
- 2.3.7 Evaluate the capability of the site and the existing infrastructure to support the program requirements
- 2.3.8 Prepare site analysis documents

### **Programming**

- 2.4.1 Tasks associated with uses, functions, and relationship associated with elements including criteria such as performance criteria, budget development, or scheduling/timing
- 2.4.2 Formulate project requirements (e.g., size, relationship, and function of elements)
- 2.4.3 Prepare preliminary project budgets and schedules
- 2.4.4 Analyze relationships among program elements
- 2.4.5 Develop performance criteria (e.g. program and/or project quality level, LEED certification, water quality)

### **Development and Evaluation of Alternative Solutions**

- 2.5.1 Tasks associated with considering alternatives, developing criteria for evaluation, and evaluating alternative solutions
- 2.5.2 Evaluate off-site influences on project or program
- 2.5.3 Integrate findings of consultants' studies
- 2.5.4 Prepare site selection recommendation(s)
- 2.5.5 Prepare alternative planning and/or design solutions including project elements
- 2.5.6 Evaluate alternative planning and/or design solutions
- 2.5.7 Apply principles of sustainability in planning and/or design solutions
- 2.5.8 Develop strategies for water conservation (e.g., rain harvesting, xeriscape, and storm water infiltration)
- 2.5.9 Identify and/or delineate resource preservation areas (e.g., native habitat preservation)
- 2.5.10 Prepare presentation materials (e.g., illustrative site plan, perspective drawing, elevations, sections, scale models)
- 2.5.11 Develop strategies for preservation of land resources (e.g. impervious cover, open space, farmland, buffer zones)
- 2.5.12 Develop strategies for security and crime prevention through environmental design (CPTED)
- 2.5.13 Evaluate impact of proposed project on existing off-site conditions
- 2.5.14 Evaluate impact of existing off-site conditions on proposed project

### **Selection and Development of Preferred Solutions**

- 2.6.1 Tasks associated with the preferred solution to the problem, including design development, planning reports, creating the master plan, and producing contract documents
- 2.6.2 Prepare design guidelines
- 2.6.3 Prepare plans for land development (e.g. land use plans, subdivision design)
- 2.6.4 Assist client in obtaining regulatory agency approvals
- 2.6.5 Select preferred solution(s)



- 2.6.6 Refine preferred solution
- 2.6.7 Plan and/or design vehicular circulation systems (e.g. cars, trucks, emergency, transit)
- 2.6.8 Plan and/or design non-vehicular circulation systems (e.g. pedestrian, equestrian, bicycle)
- 2.6.9 Plan and/or design signage systems (e.g. regulatory, informational, and directional signage systems)
- 2.6.10 Prepare storm-water management plans and details (e.g. runoff quantity, retention-detention needs)
- 2.6.11 Design storm water quality systems and details (e.g., first flush treatment, pollution skimming, filtering systems, constructed wetlands)
- 2.6.12 Design open landscape structures (e.g., pavilions)
- 2.6.13 Establish grades and elevations
- 2.6.14 Prepare earthwork calculations
- 2.6.15 Select materials for proposed construction
- 2.6.16 Prepare erosion and sedimentation control calculations, plans, and details
- 2.6.17 Prepare project reports and recommendations
- 2.6.18 Prepare construction phasing plans
- 2.6.19 Prepare demolition, clearing and grubbing plans and details
- 2.6.20 Prepare vegetation preservation/salvage plans
- 2.6.21 Prepare site plans
- 2.6.22 Prepare layout and dimension plans
- 2.6.23 Prepare grading and surface drainage calculations, plans, and details
- 2.6.24 Prepare subsurface storm drain calculations and determine pipe sizes
- 2.6.25 Coordinate consultant drawings
- 2.6.26 Prepare planting plans and details
- 2.6.27 Prepare irrigation plans, details, and calculations
- 2.6.28 Prepare bid documents
- 2.6.29 Prepare technical specifications
- 2.6.30 Coordinate specifications with contract drawings
- 2.6.31 Prepare master plans (e.g., parks and recreation plans, campus plans, new towns or communities, golf courses, office parks)
- 2.6.32 Prepare statements of probable construction costs
- 2.6.33 Prepare site construction plans
- 2.6.34 Prepare site construction details (e.g. steps and ramps, pools and fountains, retaining walls, decks)

### **Implementation**

- 2.7.1 Tasks associated with taking action on the preferred solution, such as construction, securing funding, contract administration, and observations
- 2.7.2 Perform field observations during construction
- 2.7.3 Record observations, job progress, and issues to be resolved
- 2.7.4 Review shop drawings and submittals
- 2.7.5 Perform observations and reviews for acceptance of substantially completed work
- 2.7.6 Recommend acceptance or rejection of materials (e.g. stone, furnishings)
- 2.7.7 Recommend acceptance or rejection of plant material

### **Assessment and Review**

- 2.8.1 Tasks associated with post project review and evaluation including knowledge gained for future projects
- 2.8.2 Review plans and reports for code compliance (e.g., zoning, environment, accessibility, seismic)

### **Administration**

- 2.9.1 Make formal and informal presentations to clients, agencies and public
- 2.9.2 Coordinate with and manage consultants and design team members