MULTIPLE FACTORS AND CRITERIA ENTER INTO THE DECISION ON WHETHER TO BUILD A PROJECT ON A GIVEN SITE. STUDIES SHOULD BE MADE TO DETERMINE WHETHER A SITE IS SUITABLE FOR THE INTENDED PROJECT. ONCE SELECTED, THE SAME FACTORS ALSO INFLUENCE HOW THE PROJECT IS LAID OUT ON A SITE. THREE MAIN CATEGORIES OF FACTORS PROVIDE INFLUENCE TO THE SITE SELECTION AND LAYOUT PROCESS.

1. Natural Factors
2. Man-made Factors
3. Aesthetic Factors
Natural Factor: 1) Geology

- Rock outcroppings can indicate the presence of a shallow bedrock elevation.
- Shallow bedrock can lead to foundation and trench excavation difficulties and expenses.
- Shallow bedrock may be desirable for foundation anchorage for large structures.
Natural Factor: 2) Terrain

• The physical characteristics of the land are always important.
• Large, level facilities require large, level terrain on which to build in order to minimize earthwork costs.
Natural Factor: 3) Hydrology

- Surface Water Runoff
- Floodways
- Groundwater

SITE SELECTION & LAYOUT FACTORS

CET-2030 Construction Graphics
Natural Factor: 4) Wetlands

• Regulated by US Army Corps of Engineers
• Requires three criteria to be present
  1. Hydric Soil (2000 on the list)
  2. Correct Vegetation
  3. Inundated 6.6’ or less some time during growing season.
• Minimum acreage applies for required permit.
• Provide mitigation on a 10:1 or more basis if filling a regulated wetland.
Natural Factor: 5) Soils

- Soils need to be acceptable for construction
- Ability to support foundations
- Ability to be compacted and maintain volume
- Ability to be drained
Natural Factor:
6 & 7) Delicate Ecologies

- Vegetation
- Wildlife
- Nesting Areas
Natural Factor: 8) Climate

- Solar Orientation
- Prevailing wind
- Precipitation
- Temperature
Manmade Factors:
1) Existing Surrounding Land Use

- Visual, Auditory and Olfactory
- Compatibility of adjacent uses
Manmade Factors:
2) Traffic & Transit

• Can users get to/from site without causing congestion?
• From what directions does traffic enter & leave?
• Is public transit available nearby?
• Are improvements to the system warranted?
Manmade Factors: 3) Zoning

• Zoning regulations help to regulate land use on sites for an organized development.
• Restrictions on allowable land usage
• Restrictions on building sizes and types
• Restrictions and regulations on site development (Parking, Setbacks, Green space, Signage, etc.)
Manmade Factors:
4) Other Regulations

- Fire Codes
- ADA (Americans with Disabilities Act)
- School Boards
- Other political entities
Manmade Factors: 5) Utilities

- Water, Sanitary Sewer, Natural Gas, Electric Power
- Availability & Capacity
Manmade Factors:
6) Historical & Cultural Sites

Some existing land uses are protected or at the very least require extensive channels for relocation/elimination.

- Parks
- Churches
- Burial Grounds and Cemeteries
- Historical Sites
- Historical Buildings
Manmade Factors:

7) Hazardous Materials

• Environmental Audits
  • Phase 1: Could Hazardous Materials Exist On-Site?
    • Search titles of ownership
    • Review mapping & aerials
    • Check government registries
    • Site visual inspection
  • Phase 2: In depth exploration for verification and identification of materials.
  • Phase 3: Remediation plans
Aesthetic Factors:
1) Natural Features

- Client may wish to protect natural features on-site as a part of the new development.
- Landforms
- Streams
- Ponds
- Woods
Aesthetic Factors:
2) Spatial Patterns

• Client may desire a vista, space or view to be produced as a part of the design of the site.
LEED Design
Leadership in Energy & Environmental Design
• LEED credits can be earned for environmentally sustainable site selections.
LEED Sustainable Sites: Credit 1

SS Credit 1: Site Selection
1 Point

Intent
Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.

Requirements
Do not develop buildings, hardscape, roads or parking areas on portions of sites that meet any one of the following criteria:

- Prime farmland as defined by the United States Department of Agriculture in the United States Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 (citation 7CFR657.5)
- Previously undeveloped land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA (Federal Emergency Management Agency)
- Land that is specifically identified as habitat for any species on Federal or State threatened or endangered lists
- Within 100 feet of any wetlands as defined by United States Code of Federal Regulations 40 CFR, Parts 230-233 and Part 22, and isolated wetlands or areas of special concern identified by state or local rule, OR within setback distances from wetlands prescribed in state or local regulations, as defined by local or state rule or law, whichever is more stringent
- Previously undeveloped land that is within 50 feet of a water body, defined as seas, lakes, rivers, streams and tributaries which support or could support fish, recreation or industrial use, consistent with the terminology of the Clean Water Act
- Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner (Park Authority projects are exempt)

Potential Technologies & Strategies
During the site selection process, give preference to those sites that do not include sensitive site elements and restrictive land types. Select a suitable building location and design the building with the minimal footprint to minimize site disruption of those environmentally sensitive areas identified above.