



DEPARTMENT OF ARCHITECTURAL TECHNOLOGY
718.260.5262 • Fax: 718.254.8547
E-mail: architectech@citytech.cuny.edu

SPRING 2008 AR 1250 SITE PLANNING

CIRCULATION



Streets and Roads

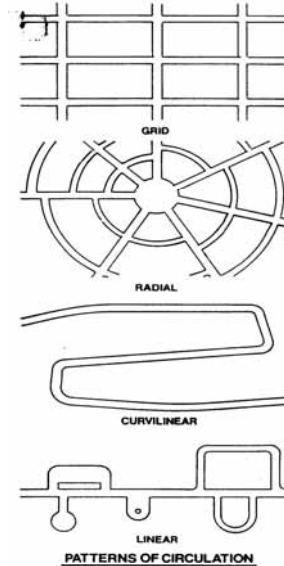
Overlook of different street systems and city plans, transportation and circulation considerations, thoroughfares, intersections. Land has little practical value if there is no access. A city can not exist without good circulation. Romans were so successful as empire builders because of their good roads.

Considerations:

1. All elements of a site must be well serviced by appropriate circulation. Not equal.
2. Design of circulation must relate to the tempo of movement it accommodates, as well as to the general nature of its surroundings. cars fast, pedestrian slow.
3. Layout must satisfy functional demands of program.
4. Flexible for future development
5. In harmony with surroundings.

Types of Vehicular Circulation Patterns:

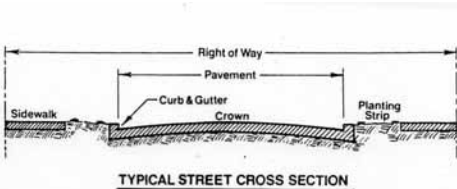
- Grid pattern - equally spaced streets, perpendicular to each other.
- Radial pattern - Central starting point, growth in several directions, network connects multiple centers
- Linear pattern - circulation occurs along a series of straight lines. (frontier towns, and suburban strips)
- Curvilinear pattern - follows land contours. Can also be used in flat areas to reduce traffic speeds and monotony.
- Switchback road - is a road that doubles back on itself with a hairpin curve which is utilized to reduce grade in climbing steep topography



Types of Streets:

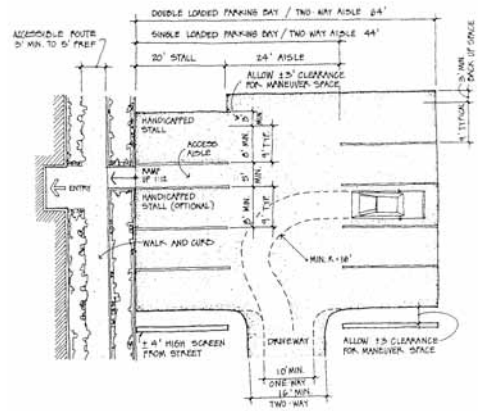
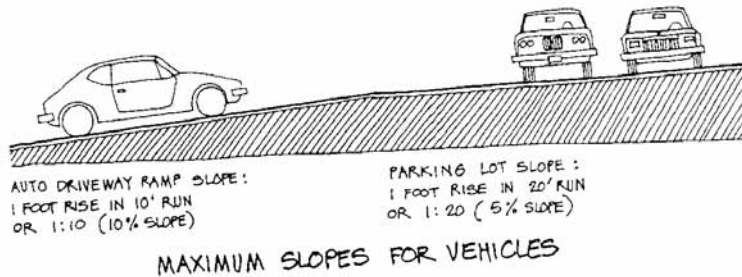
- Way - street, alley, or other thoroughfare or easement permanently established for passage of persons or vehicles.
- Loop street - a minor street which comes off a major street, runs for a short distance, and then returns to the major street.
- Intersection - the point at which two streets come together or cross.
- Collector Street - a street into which minor streets empty and which leads to a major arterial.
- Interchange - the junction of a freeway with entering or exiting traffic.
- Network - a system of circulation channels which covers a large area.

Right-of-Way: Municipality owned land, usually includes the street, curb, gutter, and sidewalks



PARKING

- Average 9' x 20'
- Minimum 8' x 18' (compact)
- Turning radii 16' sub-compact; 25' for full sized cars and 45'-50' for trucks, fire engines.



TYPICAL PARKING LAYOUT (PREFERRED DIMENSIONS)

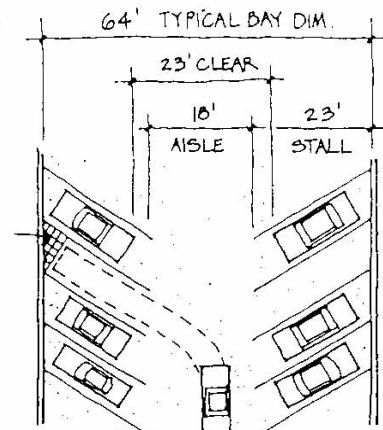
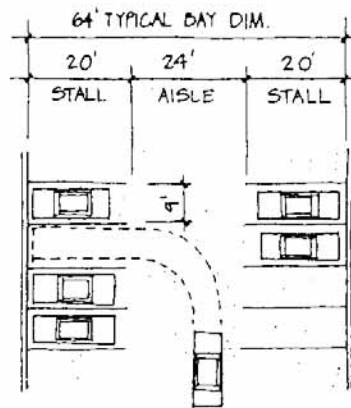
- Add 3' in width for handicapped spaces

90° Parking (20' x 9' stalls)

- 11.1 Cars for each 1000 lineal ft. of curb
- 290 Square Ft. per car area requirement
- Accommodates most Cars
- Permits 2 way Traffic
- More difficult to maneuver

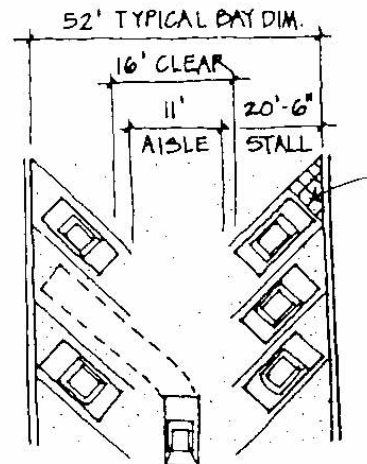
60 deg, Angle (20' x 9' stalls)

- 9.7 Cars for each 1000 lineal ft. of curb
- 333 Square Ft. per car area requirement
- Easy access
- 1 way Traffic aisles
- Most popular configuration
- Relatively economical



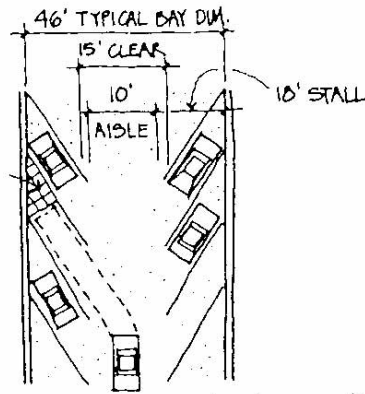
45 deg, Angle (20' x 9' stalls)

- 7.8 Cars for each 1000 lineal ft. of curb
- 333 Square Ft. per car area requirement
- Easy access
- 1 way Traffic aisles
- Relatively economical



30 deg, Angle (20' x 9' stalls)

- 5.5 Cars for each 1000 lineal ft. of curb
- 414 Square Ft. per car area requirement
- Easy access
- 1 way Traffic aisles
- Relatively uneconomical



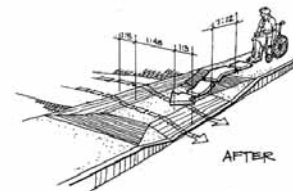
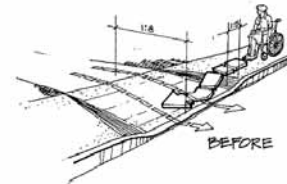
Wheel Stops: A wheel stop prevents the car from hitting a wall or encroaching on a pedestrian path.

ACCESSIBILITY:

Barrier-Free means having no environmental barriers, thereby permitting free access and circulation by the disabled. **Handicapped parking** is a space designated for the physically handicapped persons, consisting of a typical space with an adjacent aisle no less than five feet wide and with the ability to reach an accessible route.

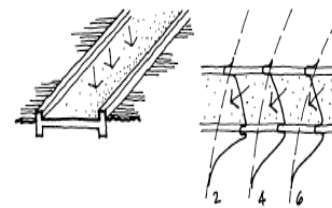
PEDESTRIAN CIRCULATION:

- average adult male 24" wide x 18" deep
- Easy movement in a crowd requires 13 sq ft or a space of 4'-4" x 3'
- Crowd movement 7 sq ft or a space of 3'-6" x 2'
- No movement 3 sq ft or 2' x 1'-6"
- more space is required on ramps and even more on stairs
- people are willing to walk about 1/2 mile or about 12 minutes
- maximum curb height should be 6 to 6-1/2 inches
- curb ramps should not exceed 8% or a 1:12 gradient
- nonslip surfaces but not corrugated which collects ice and snow and become slippery



Walkways and Gradients:

- Walks 1- 5% slope (1:100 to 1:20 gradient) can be negotiated by handicapped but if 4-5% provide 5' level area every 100 feet; 3% slopes are preferred
- Ramps 5-8% slope (1:20 to 1:12 gradient)
- Walkways slope laterally 1/4" per foot; wider walks crowned

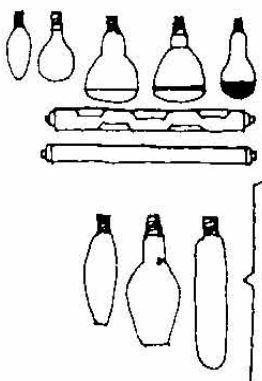


PITCHED

Stairs:

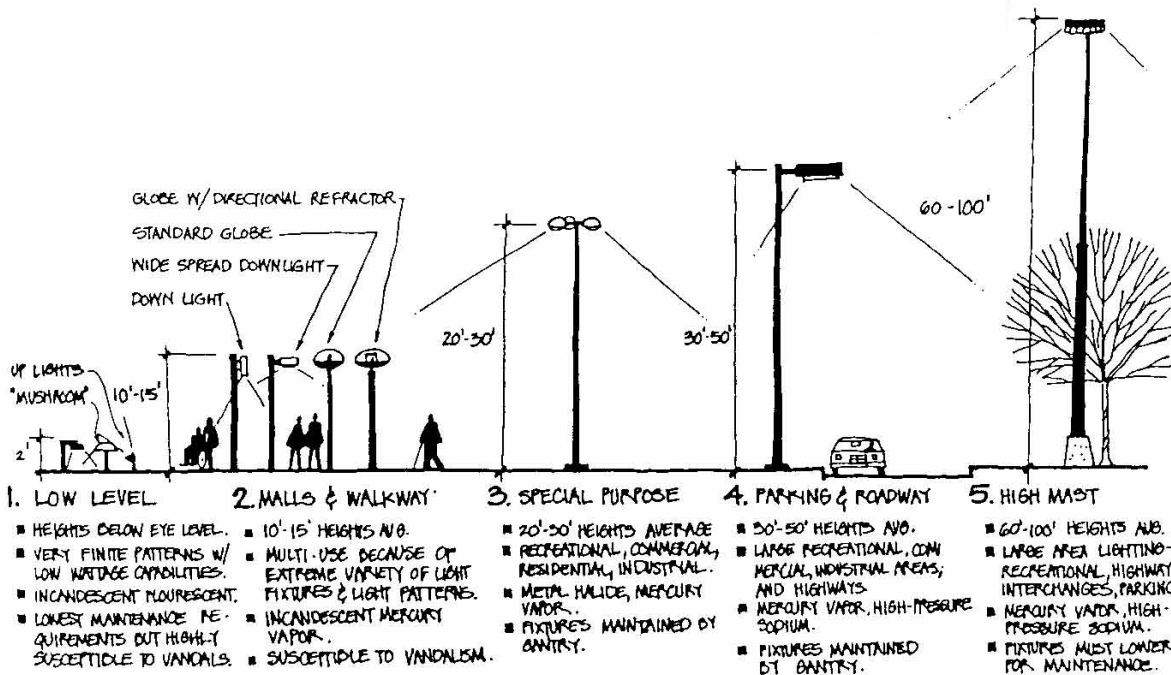
- minimum of 3 risers NO 1 or 2 risers
- if more than 4 risers, provide handrail
- if more than 8' wide, provide center handrail for every multiple of 8'
- exterior stairs have different proportions than interior
- exterior typically risers of 5-1/2" tread of 15" or 6" riser to 14" tread
- monumental stairs 3" riser & 19" tread or 4' riser & 17" tread; do not use in heavy traffic areas
- exterior stair rule 2 risers + tread = 26" to 27"
- public stairs never more than 50% gradient

Lighting:



LAMP TYPE	WATTAGE RANGE	EFFICIENCY (lumens/watt)	LIFE (HOURS)	COLORS STRENGTHENED	COLORS DIMINISHED	REMARKS
INCANDESCENT	15-1000	LOW	750-2000	YELLOW, RED, ORANGE	BLUE	GOOD COLOR RENDITION
DELUXE COOL WHITE FLUORESCENT	15-215	MEDIUM	7,500-15,000	ALL	NONE	BEST OVERALL COLOR RENDITION
DELUXE WHITE MERCURY VAPOR	90-1000	MEDIUM	10,000-24,000	BLUE, RED, YELLOW	GREEN	GOOD COLOR RENDITION
METAL HALIDE	175-1000	HIGH	7,500-10,500	YELLOW, BLUE, GREEN	RED	GOOD COLOR RENDITION
HIGH PRESSURE SODIUM	250-1000	HIGH	10,000-15,000	YELLOW, GREEN, ORANGE	RED, BLUE	POOR COLOR RENDITION

High-Intensity Discharge



TYPICAL LIGHTING STANDARDS