

TRAFFIC ENGINEERING

Civil Engineering Department

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Parking Studies

There are three main types of parking studies:

1. **Cordon count**: in which the study area is surrounded by a closed cordon and counting stations are established on all crossing roads.

The difference (In-Out) represents the no. of vehicles needed to park within the area.

2. **Direct Interview**: interviewed about the origin & destination and the purpose of parking for each individual parking in the study area.

The information together with the length of time the car was parked, enable the planner, designer to determine the parking characteristics.

- The required data may include:

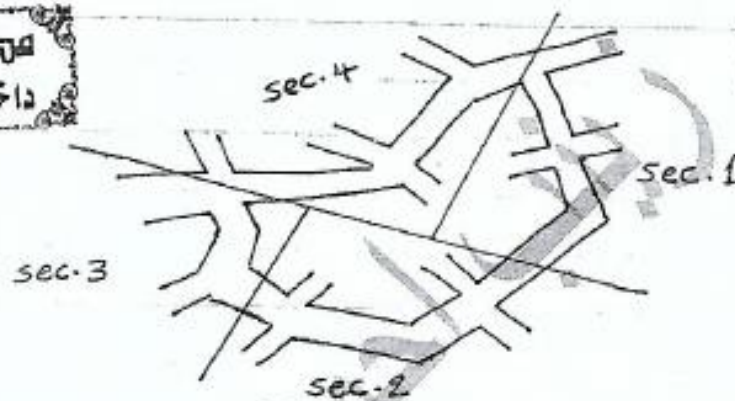
- car registration plate No.
- vehicle classification.
- nature of parking (off-street, legal on street, garage, etc.)
- frequency of parking
- time at which vehicle stopped or started out.

3. Patrol survey: study area is divided into sections sufficiently small to be toured once every ($\frac{1}{2}$ hr). On each patrol counting:

- no. of parked vehicle in the section.
- duration of parking.

patrolling may be performed by car or on foot.

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Off-Street parking operation

The off-street parking may be operated by one of the following methods:

1. By vehicle driver (self parking).
2. By parking attendants.

Parking layout

In the layout of parking stalls, the engineer should try to obtain maximum amount of storage capacity from the given workable area. But at the same time over crowding that results in restriction of necessary movements will decrease in the handling rate and would result in less efficient use of garage.

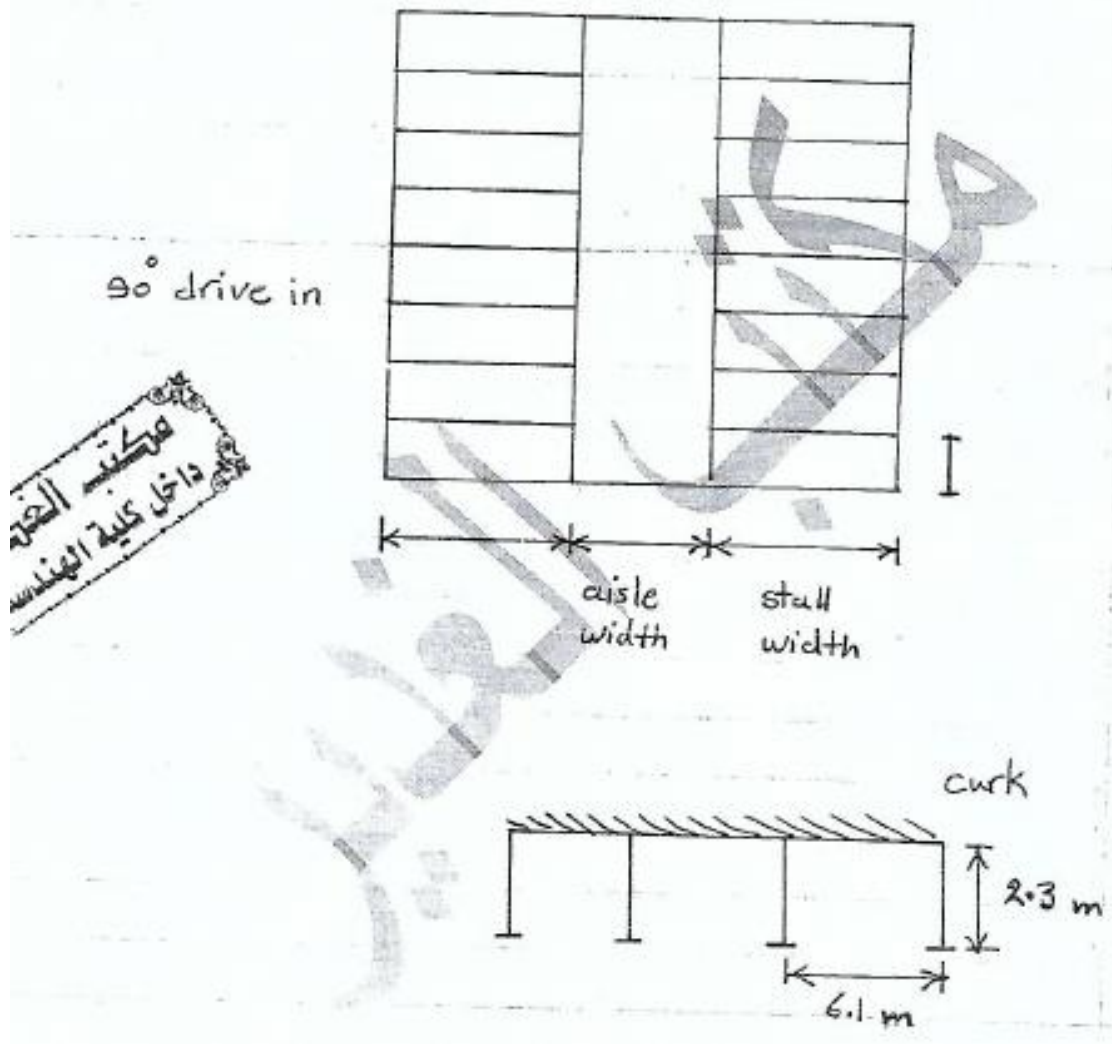
Two main points must be considered in parking layout design:

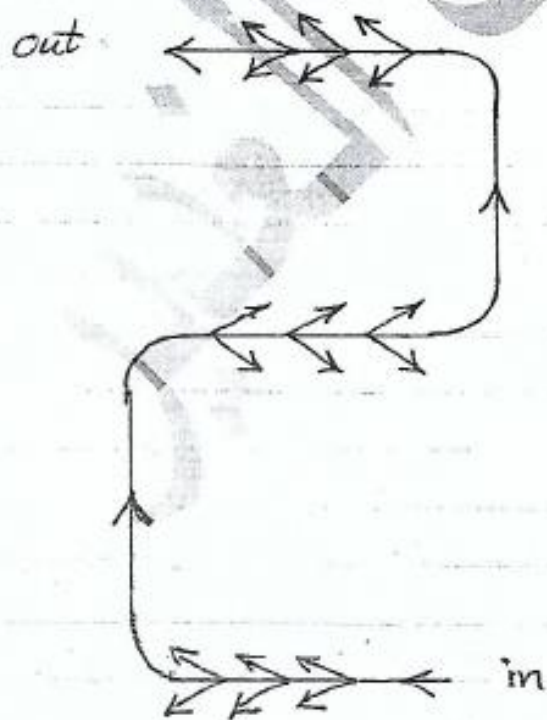
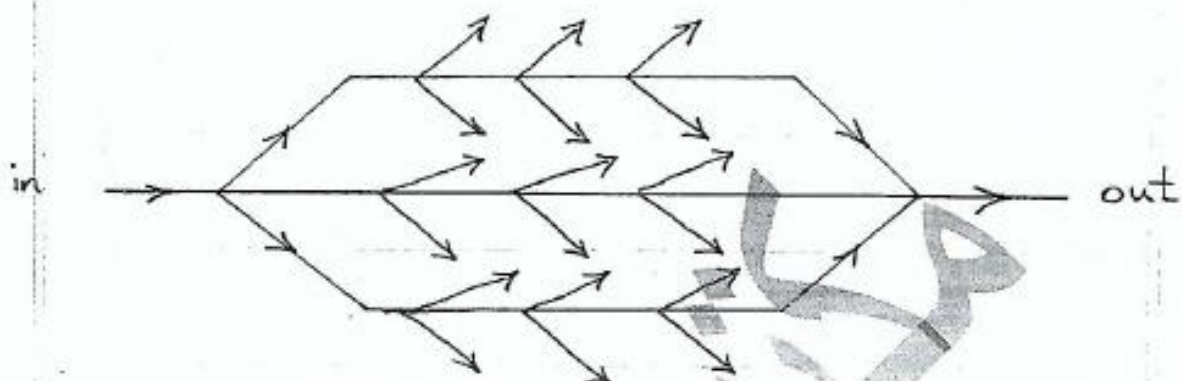
1. Flexibility → to adopt future changes in automobile dimensions.
2. Stall, aisle dimensions must be compatible.

The critical dimensions in parking layout areas are:

- width and length of stall.
- width of aisle.
- angle of parking (30° , 45° , 60° , 90°) drive in.
- radius of turn.
- other vehicle characteristics (side distance to let the driver getting of his or her car, clearance).

underground garages cost more than above ground structure because of the excavation cost, protection against vandalism, while no need for walls for above structures.





(Traffic movement in a car park)
one-way circulation