



SHORT COURSE ON SOLID WASTES  
COLLECTION AND DISPOSAL

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SOLID WASTE PROBLEMS IN BAGHDAD

by

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INTRODUCTION

The city of Baghdad in its present boundaries is located within the area of Tigris River basin in its middle course, occupying an area of 750 square km. with an estimated population of one and half million living within these boundaries. About 97% of the residential development presently existing in Baghdad consists of one family houses one or two stories high. Multistoried buildings are mostly occupied by offices.

The city consists of two main parts, the old with its narrow streets and alleys apart from the main streets with its commercial buildings and offices, and the new residential area with its wider streets and roads.

EXISTING SITUATION

The solid wastes of Baghdad contain all kinds of wastes, including garbage, rubbish, ashes, street sweepings, dead animals, solid market wastes, and solid industrial wastes from small industries.

The Municipality of Baghdad produces approximately 2 000 m<sup>3</sup> or 1 150 tons of refuse per day. It is conveyed by means of trucks to a disposal site. The crew of each truck consists of four persons for collection and one driver working in two eight-hour shifts.

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### RESPONSIBILITY FOR REFUSE STORAGE

The refuse storage on the premises is the individual responsibility of the occupant. The Health Department has the authority to request sanitary refuse storage at all premises with sufficient number of containers to hold the volume of refuse produced between collections. The containers must be located at a convenient place at the proper time.

### CONTAINERS

Each house or establishment should have a sufficient number of these containers. Containers of 5 to 10 gallons capacity are frequently used.

Movable bulk containers used by the authorities for narrow streets and alleys have a capacity of about 1 cubic yard.

### REFUSE COLLECTION

Refuse collection is an essential part of a well organized refuse handling system and has an important bearing on local vector population. If a community has no collection service, conditions are generally favourable for high fly and rat populations.

A Municipality without an adequate collection service does not fulfill its responsibility to the community.

### COLLECTION AGENCY

The method used now in Baghdad is municipal collection by city personnel using city-owned equipment. This method has been found to be the most desirable and satisfactory from the public health viewpoint.

### TYPE OF COLLECTION

Since the method of disposal largely determines the type of collection, combined collection of mixed refuse is practiced in the city of Baghdad.

### POINT OF COLLECTION

In the residential areas the point of pick-up is outside the fronts of houses and is carried out during the day time by the crew of the motorized vehicles, while in the central part of the city refuse is collected by collectors provided with covered bins on a metal trolley.

Several central collection points have been established. To these centres all refuse is brought from the downtown business districts and then conveyed by trucks at night in order to avoid heavy day time traffic. During the day time the trucks used are busy collecting refuse from the residential areas.

### COLLECTION EQUIPMENT

The types of vehicles used for collection are mostly of two kinds :  
(1) covered vehicles, (2) open vehicles which are usually covered by tarpaulins tied down over their loads. There are very few vehicles of the compactor type.

### FREQUENCY OF COLLECTION

Frequency of collection varies according to the season and type of wastes. In summer time the temperature in Baghdad reaches  $40^{\circ}$  -  $48^{\circ}$  C. and greatly affects putrescible wastes, and so the number of collections per week is higher than in winter time.

### DISPOSAL OF REFUSE

At present, disposal is done by dumping and partial incineration. Dumping is usually done into large depressions which exist around the boundaries of the Municipality of Baghdad at an average distance of 15 km from the centre of the city.

### PROBLEMS AND SOLUTIONS

The expansion of the city of Baghdad is mainly in a horizontal direction, for this reason the main problem which is facing the Municipality of Baghdad is transportation of refuse from collection points to disposal areas.

There are, of course, other problems facing the Municipality, firstly to decide on the best solution for the disposal of increasing quantities of refuse and to establish a new project for this. Studies have been made recently to find out the most economical answer to this problem. It was decided that composting was the best answer for Baghdad. I hope that this project will be executed shortly. The second problem is the lack of cooperation between the municipalities and the public. Health education for the public has been carried out through TV interviews with personnel working in the field of municipal affairs and public health and may improve this.