

**OBSERVATIONS OF
SOLID WASTE MANAGEMENT
IN BOMBAY, 1992**

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Compiled by Manfred Scheu and Adrian Coad

The observations were made by study-fellows on a course conducted by
The Water, Engineering and Development Centre (WEDC),
Loughborough University of Technology, UK and
The All India Institute of Local Self Government, Bombay, India.

The course was sponsored by the Ministry of Urban Development, Government of India
and The Overseas Development Administration (ODA) of the British Government.

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SOLID WASTE MANAGEMENT IN K-WEST WARD, BOMBAY

INTRODUCTION

This report was prepared as part of a training course jointly organised by the Ministry of Urban Development of the Government of India and the Overseas Development Administration of the British Government. It is a compilation of the information collected and analysis based on this information.

The course comprised a five week component in Britain, at WEDC, Loughborough University of Technology, during which the study fellows participated in seminars led by a number of British experts, and visited some sites concerned with solid waste collection and disposal. It was followed by a three week component that was held at the All India Institute of Local Self Government in Bombay, and it was during this part of the course that the information presented here was collected.

The reader is asked to remember that this report does not carry the weight of a consultant's report. It was compiled in a period of about two weeks, and though there was an impressive aggregate of experience among the study fellows, they did not have time to examine all the issues thoroughly. Nevertheless, this report should provide many useful insights and suggestions which are worthy of more detailed examination.

The study fellows were divided into four groups, each group considering particular aspects of solid waste management. The main focus of the exercise was K West Ward in Greater Bombay, though some of the subjects necessarily were on the city level rather than on the ward level. The four subject areas,(and the four parts of this report) and the study fellows in each group (and their posts at the time of the programme) were as follows:

Part A Administrative and financial aspects of solid waste management

| | | |
|----------------|---------------------------|---|
| Mr D S Manhas | Commissioner | Shimla Municipal Corporation |
| Dr B P Patnaik | Medical Officer of Health | New Delhi Municipal Committee |
| Mr V K Rao | Assistant Engineer | Municipal Corporation of Greater Bombay |

Part B Primary collection and storage in K-West Ward

| | | |
|----------------|---------------------|-------------------------------|
| Mr S A Gaikwad | Scientist | NEERI, Nagpur |
| Mr D N Gupta | Addl Chief Engineer | New Delhi Municipal Committee |

Part C Collection and transport in K-West Ward

| | | |
|----------------|-------------------------|---------------------------------|
| Mr Z A Sacha | Deputy Director of SWM | Ahmedabad Municipal Corporation |
| Mr H S Verypam | Executive Engineer | PHED, Imphal |
| Mr K Watal | Asst Executive Engineer | Jammu Municipality |

Part D Resource recovery and disposal in Bombay

| | | |
|---------------|--------------------|---|
| Mr M T Bondre | Executive Engineer | Municipal Corporation of Greater Bombay |
| Mr R C Dixit | Scientist - C | NEERI, Delhi |
| Mr D K Ghosh | Executive Engineer | Assam Urban WS&S Board |

The course tutors were Mr Manfred Scheu and Dr Adrian Coad.

The report is presented in four Parts, as indicated above. Appendices relating to each part are located at the end of the particular part, rather than at the end of the whole report. The start of each part is indicated by a green sheet, and the start of the appendices for each part is marked by a blue sheet.

The preparation of this report, and the second phase of the course, would not have been possible without a high level of support from a number of sources. The authors of this report would particularly like to thank Prof Mrs Sneha Palnitkar and her colleagues from the All India Institute of Local Self Government (AIILSG), Mr C D Kotnis (Chief Engineer) and his dedicated team at the Municipal Corporation of Greater Bombay, including Mr A A Vaid, Ward Officer, and Shri Anant Jadar, Municipal Councillor. The support of the Ministry of Urban Development and the Overseas Development Administration are also gratefully acknowledged.

LIST OF ABBREVIATIONS

| | |
|--------|---|
| AHS | Assistant Head Supervisor |
| AIILSG | All India Institute of Local Self Government |
| BMC | Bombay Municipal Corporation (now MCGB) |
| BP Act | Bombay Police Act |
| CE | Chief Engineer |
| CTIRC | Central Training Institute and Research Centre |
| DC | Drain Cleaner |
| DCE | Deputy Chief Engineer |
| DHS | Deputy Head Supervisor |
| DMC | Deputy Municipal Commissioner |
| EP Act | Environment Protection Act |
| HO | Health Officer |
| HRD | Human Resources Development |
| HS | Head Supervisor |
| JO | Junior Overseer |
| Km | Kilometre |
| MC | Municipal Commissioner |
| MCGB | Municipal Corporation of Greater Bombay |
| MLA | Member of Legislation Assembly |
| MP | Member of Parliament |
| ND | Nuisance Detector |
| NGO | Non Government Organisation |
| PCB | Pollution Control Board |
| PRO | Public Relations Office |
| R&D | Research and Development |
| Rs | Indian Rupees (Exchange rate in 1992 approx. Rs 44 to £ 1 sterling) |
| SI | Sanitary Inspector |
| SSLC | Senior School Leaving Certificate (12 years of school level study) |
| SWM | Solid Waste Management |
| SWMD | Solid Waste Management Department, K-West Ward |
| WO | Ward Officer |

GLOSSARY

| | |
|-------------------------------|---|
| Chowki | A place (post) for control and monitoring of refuse collection crews (see Muster Chowki and Motor Loader Chowki). |
| Community bin | Communal storage facility for refuse. |
| Compactor trolley | Standard refuse container (capacity 1.0 cum) used in conjunction with compactor trucks. (See figure B-2.11) |
| Crore | Ten million. |
| Dumper placer | More commonly called skip truck, it can lift, carry and empty one container. |
| Dumping ground | Landfill site |
| Halalkhore | Labourer who removes human excreta. |
| Hawker | Person who buys recyclable materials directly from households, door-to-door |
| K-West Ward | One of 23 wards in Bombay (study area). |
| Lac, Lakh | One hundred thousand (ten lakhs are one million). |
| Log slip | A form for holding data about the load, time of loading and unloading of a refuse vehicle. |
| Motor loader | Person who loads the solid waste manually onto a refuse collection vehicle. |
| Motor loader chowki | Place (post) where crews of refuse collection vehicles meet. |
| Mukadam | Foreman of sweepers and drain cleaners (promoted from among sweepers and DC's). |
| Muster chowki | Office of Junior Supervisor, taking attendance, giving instructions or holding meetings with mukadams and labour. |
| Nuisance Detector | A sweeper level person to detect and apprehend any nuisance creator in public places under Bombay Police Act. |
| Pipe bin | A short section of a large diameter steel pipe, used for refuse storage. |
| Picker, or Rag picker, | A person who collects recyclable material like paper, glass and rags from refuse, more commonly called scavenger. |
| Refuse shed | Enclosed masonry structure, usually with a roof, used for storage of refuse. |
| Stable | Place where cows or buffaloes are kept. |
| Sweeper | Labourer sweeping roads (in India sometimes called a scavenger). |
| Tata Compound | Location of the Office of the SWM Department in K-West Ward. |
| Trolley, trolley bin | (See "Compactor trolley" above) |
| Ward Officer | An officer who discharges all the functions of Municipal Commissioner in a ward as delegated by the Municipal Commissioner. |