Guidelines on Community Toilets

Ministry of Urban Affairs and Employment
Government of India

Regional Water and Sanitation Group - South Asia, UNDP-World Bank Water & Sanitation Program

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FOREWORD

Community Toilets play an important role in meeting the sanitation needs of densely populated low income settlements in the urban areas. In India Community Toilets have, in the past, been provided by the Municipalities and Corporations as well as by Non Governmental Organisations (NGOs). The success of these efforts, judged on the basis of sustained and proper use has been a mixed one for various reasons. At present there has been no comprehensive guidelines on the issues to be addressed at the preparation stage in order to enhance the chances of proper and sustained use of these facilities. I hope that the guidelines prepared by the Regional Water and Sanitation Group-South Asia (RWSG-SA) of the UNDP/World Bank Water and Sanitation Programme will go a long way in meeting this need.

I also hope that the Municipal Authorities will find the Guidelines useful. I would however, urge upon them to let RWSG-SA have their suggestions and comments so that the Guidelines can be further revised based on the feed-back from the field.

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Secretary to Govt. of India
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Chapter I

Introduction

Background

1. At the end of the International Drinking Water and Sanitation Decade (1981-90), sanitation coverage in India remained significantly low; in urban areas coverage in March 1992 was only 48 percent. In many parts of the country, particularly in the semi-urban areas, the sanitation conditions are generally poor and in some cases appalling. This reflects the inadequate number of household toilets either due to lack of space for construction or the inability of households to bear the capital costs or both. To a large extent, community toilets are an effective alternative for improving sanitation coverage among the densely populated low income communities in urban and semi-urban areas. Besides meeting the requirements of local residents, a community toilet also has the advantage of being able to serve the floating population in public places such as markets, bus stands, railway stations, hospitals, places of worship etc.

2. With a view to meeting the sanitation needs of the low-income communities and the floating population, several thousand community toilets have been constructed and operated by the Municipalities and non-governmental organizations (NGOs) in various cities and towns in India. These toilets are of two types; 'Pay & Use' and 'No-Pay & Use'. A study of the literature and a rapid survey2 and field investigations reveal that many community toilets remain under such insanitary conditions that the users do not like to enter them; they prefer open air defecation. Major deficiencies identified by the survey are: (i) lack of cleanliness and poor up-keep (noticeable more in the case of 'No-Pay & Use' toilets), (ii) insufficient water supply and lighting, (iii) inappropriate location, (iv) poor construction standards, (v) insecurity (specially for female users), and (vi) inadequate funds for operation and maintenance. Many of these deficiencies can be effectively addressed by better planning, design, construction, operation and maintenance.

Need for the Guidelines

3. At present there are no comprehensive guidelines on community toilets that provide information to the implementing agencies on issues related to aggregation of user preferences, demand responsive designs, construction, operation and maintenance. With the current emphasis by the Government of India and the state governments on the provision of community toilets to improve environmental sanitation, there is an urgent need for comprehensive guidelines to help the implementing agencies in the proper planning and management of these toilets.

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1 Planning Commission (Govt. of India), Eighth Five Year Plan.

2 For the preparation of these guidelines on design, construction, operation and maintenance of community toilets, rapid field investigations were carried out in four cities in India viz. Bombay, Calcutta, Lucknow, and Madras. Two community toilets, operated on a 'Pay & Use' system and one, operated on a 'No-Pay & Use' basis, were selected from each city for the survey except in the case of Calcutta where three were selected from the first category and one from the second.
4. The guidelines given here are based on the experience gained in India from the operation and maintenance of more than 2000 'Pay & Use' and several thousand 'No-Pay & Use' community toilets in urban and semi-urban areas. The guidelines also draw on the findings of the rapid survey and field investigations already mentioned.

**Target Groups**

5. The target groups for these guidelines include: municipal administrators and engineers, state road transport authorities, railways, implementing agencies and NGOs involved in construction and/or operation and maintenance of community toilets.

**Lay out of the Guidelines**

6. Chapter II describes the methodology of project preparation, community preference assessment and instruments for the field survey. Chapter III discusses the design criteria, provides some typical designs and also a few tips for construction. Chapter IV is devoted to the operation and maintenance aspects of the community toilets such as operation and maintenance schedules, operation and maintenance staff and their responsibilities, storage requirements, creation of awareness among users and monitoring by local bodies. Chapter V covers institutional and financial arrangements for community toilets. This includes a review of current institutional and financial practices, their merits and demerits and suggestions for improvements, and training of staff.
1. Project preparation means the documentation of all the relevant technical, financial, social, institutional, operational and maintenance aspects of a project in a structured manner. A well structured project document reflects the effective demand for services and enables the concerned agency to successfully implement the project and ensures its sustained operation and maintenance.

Project Preparation Steps
2. Project preparation includes community preference assessment, site selection, site specific investigations, collection of information on institutional and financial aspects for construction, operation and maintenance of the community toilets and finally the preparation of the project document.

Community Preference Assessment
3. The objective of community preference assessment is to reveal the effective demand for services from a community toilet. A well defined survey is a pre-requisite for estimating demand. The survey would include assessing the households without a toilet, estimating the number of non-resident users, assessing the preferences of potential resident and non-resident users and aggregating their preferences.

i) Survey for Assessing Households Without Toilet: The purpose of this survey is to assess the number of households without toilet, number of persons living in these households and their economic background, present place for defecation, demand for a community toilet and reasons for not constructing household toilets. An assessment should also be made of the number of pavement dwellers. A survey format for the general households and pavement dwellers is given in Annex 1.

ii) Survey for Assessing the Preferences of Residents: This includes a field survey covering about 25 percent of the total number of households without toilets in the project area. The households should be selected in such a manner that the sample covers adequately all socio-economic groups. The aim of the survey will be to collect information on the number of family members who are likely to use the community toilets including bathing and washing facilities, willingness to pay capital costs partially and O&M costs fully, preferred location, preferred hours of use, material used for anal cleaning and social beliefs. A format for this survey is given in Annex 2.

iii) Survey for Assessing the Number of Users of Other Categories: Other categories of users include floating population, rickshaw/hand cart pullers, taxi drivers and other similar groups of people. For assessing the floating population, discussions should be held with the authorities managing public facilities like hospitals, bus terminals and railway stations, trade organizations and places of worship, as found necessary. An assessment should also be made of the number of rickshaw and
hand cart pullers, taxi drivers etc., who are likely to use the community toilet. A format for assessing the floating population and other categories of users is given in Annex 3.

iv) Survey for Assessing the Preferences of Users of Other Categories: The purpose of interviewing non-resident users is to collect information on their demand for sanitation and their willingness to pay for a community toilet. About five percent of this category of users should be interviewed. A format for such a survey is given in Annex 4.

v) Aggregation of User Preferences: The user preferences arrived at through the resident surveys should be consolidated in order to arrive at the total number of resident users. To this should be added the number of users of other categories to obtain the total number of users. By extrapolation of data collected during the survey using formats given in Annex 2 and Annex 4, an estimate can be made of the total number of users for each facility.

Site Selection

4. Location of an appropriate site is often a complex task. The rapid survey, mentioned earlier in chapter 1, reveals that people, especially the women and the aged, are unlikely to use the facility if it is provided beyond half a kilometer distance. Hence the community toilet should be located close to the dwellings of its users; if possible within half a kilometer distance or less. It should also be accessible to the users throughout the year. The convenience of the local community should therefore be the main guiding factor in the location of a toilet. The site should be selected by the community. The implementing agency should provide information to enable the community to appreciate the advantages and disadvantages of the various options for siting the toilet.

Site Specific Investigations

5. These include: collection of site specific data on soil characteristics, ground water levels during various seasons, flooding/water logging of the site, availability of sewer lines for disposal of wastewater, and availability of water supply and electricity. Wherever necessary, a topographic map for the site needs to be prepared. Annex 5 gives a checklist for collection of site specific data, based on which decisions on the type of foundation for civil structure, wastewater disposal system and also the need for making independent arrangements for water and electricity can be taken.

Information on Institutional & Financial Aspects:

6. The institutional and financial aspects should be discussed with community leaders, the local body, non-governmental organizations (NGOs) and community based organizations (CBOs). Institutional aspects include: investigations of the institutional options available for construction, operation and maintenance of the community toilets; and information on experience, credibility and past performance of NGOs with potential for participation in a community toilet programme. Financial aspects cover: investigation of potential methods for meeting capital and recurrent costs; listing of agencies that can finance the capital costs; and also the possibility of recovering the full operation and maintenance costs of the community toilet on a ‘Pay & Use’ basis. A detailed checklist of information on institutional and financial aspects is included in Annex 5.

7. Based on the data collected from the field survey, the agency responsible for the project report preparation should place before the community, various institutional and financial options along with the advantages and disadvantages of each, in order to facilitate decision making by the community. For instance, the implications in terms of user charges of operation and maintenance by

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3 Recurrent costs include: depreciation, loan (capital cost) repayment, interest on loan and operation and maintenance costs.
community, private sector, an NGO and the local body may be shown to the community to facilitate their choice. To ensure meaningful community participation, it is essential that the users are consulted right from the inception of the project idea.

**Project Preparation Team**

8. The project preparation requires multi-disciplinary skills. The core project team should, therefore, comprise a sociologist, a public health engineer and field investigators with inputs from a civil engineer and a financial expert. The field investigators should be briefed about the objectives of the survey and trained in the use of survey instruments, especially in interviewing and recording data on survey forms. Sample checks must be carried out by the supervisors during the survey to ensure that the data is reliable and communication gaps between the interviewers and the respondents are kept to a minimum.

**Project Document**

9. The survey information collected forms the basis for preparation of the project document. The guidelines on design and construction, operation and maintenance and institutional and financial aspects given in the following chapters will be of help in the preparation of the project document. The recommended content list for the project document is given in Annex 6.
Chapter III

Design & Construction

1. The design is an important aspect of a community toilet. A well designed community toilet reflects the preference of the community it serves and enhances its use and sustainability. While designing a community toilet, factors like the preference and convenience of the users, durability of construction, ease of operation and maintenance and cost effectiveness should be taken into account.

Common Design Deficiencies

2. Past experience, the rapid survey and field investigations mentioned in chapter 1 reveal the following common design deficiencies in community toilets:

i) The number of toilet units available falls short of the actual requirements of the community with the result that they are crowded and user experience long waiting times.

ii) Children need small squatting seats. It has been noticed that this requirement is not met in a large number of cases. Therefore, children defecate outside the toilet or in the open area.

iii) Separate space for washing clothes is not provided. Therefore, bathrooms are used for washing clothes. Consequently the users have to wait a long time for their turn to take bath.

iv) Poor ventilation results in a foul smell, which attracts insects.

v) No proper place is provided for people to wait.

vi) Water supply is not available on a continuous basis. There is no lighting arrangement to facilitate use of the toilet in the night.

vii) There is no proper disposal system. Septic tank effluent is usually discharged into the open drains causing obnoxious odor. These drains create health hazards and also are breeding grounds for mosquitoes and other insects.

viii) Maintenance is unsatisfactory because of poor flooring, improper drainage, lack of caretaker room, store etc.

3. These deficiencies must be avoided while designing and constructing a community toilet.

Classification by Location

4. The location of a community toilet influences the type and range of facilities to be provided. These are as follows:

i) Residential: The facilities provided in a community toilet block in a residential area are primarily used by residents of the area including the pavement dwellers. The users normally prefer to have toilet, urinal, bathing and washing facilities in the toilet block. However, urinals are not used extensively since people leave their homes for work in the morning and return late in the evening. In the night the urinals are used occasionally.

The facilities normally include:

a) Independent compartments or toilet blocks for men and women with separate entries from a lobby.
b) Toilet seat for children in the section for women.
c) Circulating area in each section.
d) Lobby for entry into the toilet block and also to seat the caretaker.
e) Separate bathing cubicles for men and women.
f) Separate places for washing clothes in the male and female sections.
g) Urinal facility for men (women may use toilets).
h) Water supply.
i) Electricity.
j) Wastewater disposal system.
k) Superstructure.
l) A room for the caretaker to live in.
m) A store for keeping the cleaning materials and equipment.

ii) **Non-residential**: The community toilets located near railway stations, bus terminals, truck stands, beaches, bathing ghats, market places, hospitals and religious places come under this category. They are used mainly by the floating population (rickshaw pullers, three wheeler/taxi/truck drivers, pavement dwellers, hawkers, petty shop keepers and travelling public). In comparison to residential areas, more people use urinal and bathing facilities. While a community toilet near a bus terminus or a railway station is generally used round the clock, use is generally restricted to day time and evening in the case of toilet blocks located near markets, hospitals and religious places. In addition to the facilities mentioned in 4(i) above, a non-residential community toilet may have additional facilities like:

a) Room for keeping the luggage of users; and
b) Special bathrooms with toilet seat, shower and washbasin.

Items like tooth paste/tooth powder, soap and towel can be made available to users on payment. Items (a) and (b) are normally provided in community toilets near a railway station or a bus terminus.

**Design Parameters**

5. Important design parameters of a community toilet are:

i) **No. of Facilities**: The number of facilities required can be worked out based on the norms for users per day given in Table 3.1.

ii) **Size of the Facilities**: The optimum and minimum sizes of toilet cubicle, bathroom, urinal and washing area are given in Table 3.2.

<table>
<thead>
<tr>
<th>Location</th>
<th>Toilet Seats</th>
<th>Bath Units</th>
<th>Urinal Units</th>
<th>Clothes washing area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential areas where toilet block is not generally used at night</td>
<td>One seat per 50 users</td>
<td>One unit per 50 users</td>
<td>One unit per 200-300 users</td>
<td>4.5 m² per 10 toilet seats. A minimum of 1.5x1.2m</td>
</tr>
<tr>
<td>Non-residential: Railway stations, bus depots, etc. where use of toilet block is round the clock</td>
<td>One seat per 100 users</td>
<td>One unit per 70 users</td>
<td>One unit per 300-500 users</td>
<td>4.5 m² per 30 toilet seats. A minimum of 1.5x1.2m.</td>
</tr>
<tr>
<td>Non-residential: Near market place, hospital, religious place where toilet block is not used at night.</td>
<td>One seat per 100 users</td>
<td>One unit per 50 users</td>
<td>One unit per 200-300 users</td>
<td>4.5 m² per 10 toilet seats. A minimum of 1.5x1.2m</td>
</tr>
</tbody>
</table>

*Note*: The numbers of toilet seats, bath, urinal units and washing area given in this table are based on the experience and data collected during the rapid survey.
Table 3.2 Size of Toilet Cubicle, Bathroom Cubicle, Urinal & Washing Area

<table>
<thead>
<tr>
<th>Description</th>
<th>Optimum (mm)</th>
<th>Minimum* (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet cubicle</td>
<td>900 x 1200</td>
<td>750 x 900</td>
</tr>
<tr>
<td>Bathroom</td>
<td>1050 x 1200</td>
<td>900 x 1050</td>
</tr>
<tr>
<td>Urinals (divided into units by partition wall), but without urinal pots</td>
<td>575 x 675</td>
<td>500 x 600</td>
</tr>
<tr>
<td>Washing area</td>
<td>1750 x 1500</td>
<td>1500 x 1200</td>
</tr>
</tbody>
</table>

*In case of space constraints, the minimum size may be adopted.

ii) **Circulating Area**: Adequate circulating area (free area for users to move inside the toilet block) should be provided. Usually it is 2-3m wide depending upon the land area available. Circulating area should, as far as possible, be kept open to the sky for fresh air and sunlight. In places which are subjected to snowfall or heavy rains, the circulating area should be covered. Wherever it is not possible to keep the circulating area open to the sky, adequate lighting and ventilation arrangements should be provided.

iv) **Store, Caretaker Room & Pump House**: A store room and a caretaker room should be provided. A pump house may also be provided where required.

v) **Superstructure**: Superstructures should be well ventilated and designed with materials and specifications suitable for a 30 year life. Superstructures should provide convenience and privacy to the users as well as ease in operation and maintenance. Construction details of a typical 11-seat community toilet block are given in DRG. No.1.

vi) **Water Supply**: Lack of an adequate and continuous supply of water has been observed as one of the contributory factors to the unhygienic conditions in community toilets. It is therefore necessary that each community toilet is provided with a dependable water supply system. Wherever an uninterrupted supply of water can not be provided by the municipal water supply system, a tube well should be constructed exclusively to meet the requirements of the toilet block. Water requirement for each use of the toilet facility, including washing hands and floors, is 7 liters. The requirement for bathing is about 15 liters per user, for flushing urinals 0.20 liter and for washing clothes about 20 liters. If water is to be drawn from the municipal supply, an underground reservoir of half a day's capacity, an overhead tank of similar capacity and pumping arrangements with a standby pump will have to be provided. If a tube well is constructed exclusively for the toilet block, it will be preferable to keep a stand by pumping unit. In such a case, an underground reservoir will not be necessary as water can be pumped directly into the overhead tank. It is desirable to have an RCC or a PVC water storage tank. To minimize the wastage of water, the use of self closing water taps is recommended.

vii) **Sanitary & Water Supply Fixtures**: Fixtures (like the wash hand basins, toilet pans, traps and foot-rests) to be provided are indicated in DRG. No. 1. These should be of an approved standard. The squatting pans should be made from ceramic and be of a Pour Flush (PF) design. Traps should be of a 20 mm water seal (See DRG. No. 2). Use of traps with water seal of 50 mm should be avoided to minimize water use for flushing. Where the community toilet block is to be connected to the municipal sewerage system, a master trap should be provided before connection to the sewer. Wash hand basins should be provided for in both the male and female compartments. For convenience in maintenance, a perforated pipe with water dripping continuously should be fixed on the wall for flushing the urinals. The urinals should not be fitted with urinal pots as their replacement is expensive. The
design features of a urinal should include: (a) dividers, (b) walls (up to 2m height) and floor with ceramic tiles, and (c) perforated pipe to ensure water supply to keep urinals clean. The typical details of a urinal are given in DRG. No. 3. The pipe and fittings used for water supply should be of a reputed make.

viii) Lighting Arrangement: The toilet block should be well lit, both inside and outside. One common light point may be provided for in each pair of toilet cubicles by limiting the partition wall to door height. The bathrooms, pump house, lobby and the caretaker room should have separate light points. Areas for circulating, washing and urinal together with the outside of the toilet should be well lit. The lobby and the caretaker room should be provided with ceiling fans.

ix) Disposal System: There can be four alternatives for disposal of wastewater from a community toilet block, (a) sewer, (b) septic tanks with effluent discharge (c) leach pits, and (d) a digester to generate biogas with effluent discharge.

a) Sewer: If a sewer is available within a distance of one kilometer and it is feasible to connect the toilet block to it, disposal to sewer should be preferred. The advantage in doing so is that the problems and costs associated with wastewater treatment and disposal are minimized. The wastewater should be collected and conveyed by laying pipes or, for short distances, constructing a covered brick drain. The brick drain has the advantage that any blockages can be easily removed by lifting the cover. (See DRG. Nos. 4 and 5.)

b) Septic Tank: If a sewer is not available or if it is not feasible to connect the toilet to a sewer network, a septic tank will have to be provided. It is important that only the toilet and urinal wastes should be connected to the septic tank. In no case should wastewater from the bathroom and washing area be taken into the septic tank because of the problems associated with the subsequent disposal of large quantities of effluent from the septic tank through soakage pits or a dispersion trench.

Wastewater from the bathrooms and washing area should be discharged into an open drainage channel (storm water drains) covered with slabs. If an open channel is not available, soakage pits may be provided. Alternatively, wastewater from the bathroom and washing area may be used for gardening in the area surrounding the community toilet. In cases where a drainage channel is not available and soakage pits can not be constructed due to space constraints or poor soil permeability, a holding tank should be provided. The wastewater must then be pumped out at frequent intervals by a tanker fitted with a vacuum pump and discharged at a wastewater treatment plant or in a sewer. Where there is a problem of wastewater disposal, one alternative could be to avoid construction of bathrooms and washing area.

Under no circumstances should effluent from the septic tank be allowed to discharge into open drains or a water body. The most common practice for septic tank effluent disposal has been to construct soakage pits or dispersion trenches. In water logged areas or where the soil is impervious, dispersion trenches should be provided. It is desirable to have two septic tanks each having half the total required capacity and to operate both of them. This permits the flow to pass through one unit while the other is being de-sludged. The design of a typical septic tank is given in Annex 7. (For construction details, see DRG. No. 6). The typical design calculations of a soakage pit are given in Annex 8. (See also DRG. No. 7). Dispersion trenches can also be designed on the same basis. At the time of commissioning, the septic tank should, preferably, be seeded with a small quantity of well digested sludge obtained from another septic tank. In the absence of
digested sludge, a small quantity of digested cow dung may be introduced.

c) Leach Pits: If it is not feasible to connect the toilet to a sewer, leach pits can be used for small community toilets of up to 100 users. It is preferable to have two sets of twin pits, each pit having sufficient capacity for half the number of likely users.

d) Digester: A digester can be installed in the place of a septic tank to generate biogas. Biogas generation is expected to be about 0.0283 m³ per user per day at 35°C temperature. It can be used for lighting and cooking purposes directly or for generating electricity by a dual fuel engine coupled with an alternator. Biogas produced from a 1000 users' community toilet could cater to the cooking needs of about twenty families. Alternatively, forty to fifty single mantle lamps (equivalent to a 40 Watt bulb) can be lit for 5 hours by the biogas generated from a 1000 users' community toilet. The cost of installing a digester is higher than that of a septic tank, but besides the availability of biogas, a digester has the additional advantage that its effluent has less suspended solids and is of better quality than septic tank effluent. However, the effluent still contains a high load of pathogens and needs to be disposed off properly. Experience shows that biogas generation for energy is not economically viable where electricity is available or biogas from human excreta is not accepted as a domestic fuel. It is therefore, necessary to carry out an in-depth study to assess its financial viability and acceptability before proposing a biogas plant along with a community toilet.

Layout Plan of the Toilet

6. Based on the type of waste disposal and water supply arrangements, and the number of toilet seats, baths, urinals and washing areas to be provided, a layout plan of major components of the community toilet including disposal system may be prepared, keeping in view the land area available.

Detailed Drawing of a Community Toilet

7. Based on the facilities to be provided and the layout plan, the construction drawing of a toilet block should be prepared. As far as possible, the design should also provide for extension of the facilities in future. The design of a toilet block should be adjusted to suit the availability of land area. It also should be aesthetically attractive. The toilet block can extend to two or three floors where limited land is available. At least one toilet and one bathroom each for males and females should be provided on the ground floor for aged, sick and disabled persons.

8. The primary objective of a community toilet is to provide toilet facilities. In case of space constraints, priority should be given to the provision of an adequate number of toilet seats and urinals. Thereafter, subject to the availability of space, provision of bathrooms and washing area can be considered. To economize on the use of space, the septic tank can be constructed under the circulating area, toilet cubicles of the minimum size can be provided and consideration given to building a basement, although basements are difficult to drain and protect from flooding.

9. The conceptual design of a community toilet area is illustrated in DRG. Nos. 8 - 12. If the budget permits, a boundary wall of 1500 mm height with a gate should be provided around the toilet block. The conceptual layout of a community toilet is given in DRG. No. 13.

Construction

10. The following recommendations are intended to ensure quality and also completion of the project on schedule.

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4 Leach pits should be designed as per the 'Technical Guidelines on Twin Pit Pour Flush Latrines' by the Ministry of Urban Development, Govt. of India and Regional Water & Sanitation Group - South Asia, UNDP/World Bank Water & Sanitation Program, 1992.
i) **Materials & Workmanship:** All works should be carried out according to the relevant specifications, approved designs and drawings. Materials used in construction should be of specified quality and standards. The workmanship and quality of work should be good.

ii) **Squatting Pans, Traps & Foot-rests:** The squatting pans and traps should be fixed carefully so that the trap has a 20 mm water-seal, the top of the pan is level with the floor, and the floor drains freely to the pan (See DRG. No. 2). For user comfort, there should be a 200 mm space between the rear edge of the pan and the back wall of the superstructure. Foot-rests should be fixed at the time of laying the floor. These should be about 20 mm above the floor level inclined, slightly away from the squatting pan in the front.

iii) **Water Tightness:** The water reservoirs, pipe lines and sewers should be tested for water tightness.

iv) **Pollution Prevention:** Precautions should be taken in the construction of soakage pits or dispersion trenches to prevent pollution of nearby drinking water sources.

v) **Site Development:** The site should be developed to make it aesthetically attractive. Ever-green trees, plants and shrubs should be planted to create shade and act as a buffer zone between the toilet block and its surroundings.

vi) **Time Schedule:** The work should be completed within the specified time to avoid cost over-run as well as to ensure the use of the facility as planned.

vii) **Supervision:** The construction should be carried out under the strict supervision of the local body. A check list for supervising the construction is given in Annex 9.

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Chapter IV

Operation and Maintenance

1. Many community toilets maintained by local bodies are rarely used or not used due to poor upkeep and appalling insanitary conditions. By comparison those maintained by community based organizations (CBOs) or non-government organizations (NGOs), are generally in better conditions. Operation and maintenance (O&M) schedules, responsibilities of O&M staff and other requirements for good upkeep and effective performance of community toilets are discussed below.

Operation and Maintenance Schedules

2. Daily Schedule: To ensure proper upkeep of a community toilet, the following daily operation and maintenance schedule is recommended.

a. Up-keep & Cleanliness: The toilet block should be kept clean and tidy. Toilet pans, urinals, wash hand basin, troughs and tiles should be cleaned daily twice or thrice a day with cleaning powder. Other areas inside such as circulating areas and waiting facilities, should be cleaned once or twice a day.

b. Soap Powder: A teaspoonful of soap powder should be given to each user to wash hands after defecation.

c. Water Supply: Adequate round the clock water supply should be ensured. All the storage tanks should be kept full to ensure that the use of the toilet block is not affected, even when there is a breakdown in power or municipal water supply.

d. Lighting: All light points should be kept in working order to allow the use of the toilet block during the night.

e. Chokage: As soon as chokage in a squatting pan, trap, drain or sewer is noticed, it should be removed promptly.

f. Minor repairs: Minor civil, electrical, plumbing and mechanical faults should be repaired as and when they occur.

3. Weekly Schedule: The entire toilet complex should be cleaned thoroughly once a week, on a fixed day. Diluted hydrochloric acid may be used for removal of yellow stains on squatting pans, tiles etc.

4. Half Yearly and Annual Schedules:

a. Cleaning of Water Storage Tanks: Water tanks should be cleaned at least once a year.

b. Painting & Repairs: White/color washing, painting and repairs should be carried out once a year. If found necessary, these may be needed more frequently. Toilet blocks which are used 24 hours per day by a large number of users need white washing, painting and repairs at least twice a year.

c. Septic Tank De-sludging: Half-yearly or yearly de-sludging is desirable, as frequent de-sludging inhibits anaerobic digestion. However, a septic tank should be emptied when the depth of the scum and sludge exceeds two-thirds of its total depth. Since the septic tank contains fresh human excreta and undigested sludge at the time of de-sludging, the contents are heavily loaded with pathogens and are not safe for handling. Hence if cleaning and disposal are not done carefully, they may lead to problems like foul smell, fly nuisance and health hazards.
Manual handling of sludge should be avoided. Portable vacuum pumps with tankers should be used for emptying. Of the two tanks, one should be emptied at a time so that the toilet use remains uninterrupted. A portion of the sludge, not less than 25 mm in depth, should be left behind in the tank bottom to act as the seed material for fresh deposits. When removal of the sludge is carried out, the scum should be disturbed as little as possible in order to ensure efficient operation of the septic tank.

d. **Sludge Disposal**: Septic tank sludge should not be spread on the ground in the vicinity of the toilet block or residential area. It should be disposed of in a running sewer of at least 400 mm dia, if available. Otherwise, it should be dried in pits which should be located at a safe distance from any habitation to prevent a health hazard.

5. **General Up-keep Measures**: In addition to the above routine O&M schedules, the following general up-keep measures should be carried out to ensure uninterrupted operation and use of the facilities.

a. **Septic Tank**: Wastewater from washing area and bathrooms should not be allowed to enter the septic tank. Use of excessive quantities of detergents and disinfectants should be avoided as they adversely affect the anaerobic decomposition in the septic tank. Under no circumstances, should septic tank effluent be discharged into an open drain or a water body. Effluent should be absorbed in soak pits. There should not be any overflow from the soak pits.

b. **Vegetation**: Trees, plants and shrubs should be planted in the open area available within the community toilet block and looked after to improve the landscape.

c. **Anti-social Elements**: The maintenance staff should keep strict vigil against the use of the toilet block for illegal purposes by anti-social elements. As and when necessary, police assistance should be sought.

d. **Charges from Users**: Strict control should be exercised to see that the caretaker does not charge the users more than the specified amount.

e. **Complaints & Suggestions**: A board should be fixed at a prominent place explaining that complaints or suggestions regarding operation and maintenance of the community toilet block can be entered in the complaint book available with the caretaker. In addition to a complaint book, a complaint box with lock should also be installed at the entrance. This should be opened by the supervisor periodically. The complaints should be attended to promptly and suggestions offered considered expeditiously. The address and telephone numbers of the operating agency should be displayed to enable a user to contact the agency regarding any complaint or suggestion.

**O&M Staff and their Responsibilities**

6. For effective implementation of the recommended O&M schedules and general up-keep measures, the following categories of O&M staff should be appointed.

a. **Attendant** will be responsible for keeping the community toilet clean by carrying out most of the day-to-day activities, listed above in paras 2 and 3. At least one attendant should be available during the usage hours.

b. **Caretaker** will be responsible for:
   - overall operation and maintenance and up-keep of the community toilet complex;
   - regulate the use on a “first come first served” basis;
   - receipt and issue of cleaning materials and equipment;
   - carrying out routine repairs and replacements;
   - collection of user-charges (in case of monthly pass-holders, making the entry in the card and signing it whenever the payment is received);
m maintaining the complaint and suggestion book properly; and
eeducating the users.

If the operation and maintenance, is carried out by the local community, this function is usually looked after by a community member.

c. Supervisor will be responsible for monitoring the performance of attendants and caretakers and for keeping a record on the status of operation and maintenance of each toilet complex, please refer to the check-list given in Annex 10. The supervisor should plan visits in such a way that he/she inspects the community toilet at different hours of the day. A few visits should be during the peak hours. A supervisor’s duties include:

a) ensuring that the toilets are neat and clean, all infrastructural facilities are available and functioning well and users are fully satisfied;
b) attending the complaints and suggestions recorded in the complaint book/box;
c) collecting the user service charges from the caretakers and depositing them daily in the bank or at the instructed place (if collection on any day falls short of target or the operation and maintenance expenditure is high, he/she should enquire into it, and
d) bringing to the notice of the concerned person/authority, the difficulties and problems faced in the operation of the community toilet blocks.

If the operation and maintenance is carried out by the community, this function is usually performed by a community member.

O&M Staff Requirements

7. The number of persons needed in each category for the operation and maintenance of a community toilet block depends upon the number of users, the usage hours, method of user charge collection, and the institutional arrangements for O&M (by community members or CBOs/NGOs or contractor or local bodies). The aim should be to appoint the minimum number of staff essential for carrying out all the daily and weekly O&M schedules and general up-keep measures.

8. A flexible and pragmatic approach should be followed in defining the requirements and responsibilities of each category of staff. For example, if an external agency is assigned O&M responsibility for only a small number of community toilets, then the supervisor may in addition to his/her normal duty of supervision be asked to look after other functions such as accounting, record keeping, procurement etc. In case of community managed toilets, one of the community members can look after the duties of a supervisor. In community toilets where users pay on a monthly basis, a caretaker may also look after all functions of a caretaker excluding collection of user charges. This is to ensure that the attendant remains on duty in the toilet block. However, if user charges are collected on a daily basis a full-time caretaker will be needed. A community toilet for about 200 persons which is not generally used in the night, can be operated and maintained by one attendant only, if users pay on a monthly basis.

9. As far as possible a lady attendant should be appointed for the female section. However, if for economic reasons it is not possible to keep separate attendants for the male and female sections, the male attendant should clean the female section also during a non-use or lean-use period. Under such situations, female users should be warned that the facilities are being cleaned.

10. Active participation by the community, particularly in the case of residential areas, not only ensures proper operation and maintenance of the toilet but also reduces the O&M costs and consequently the user charges. The local body should, therefore, encourage community based O&M wherever feasible but technical support from the local body will still be required to solve major maintenance problems.

11. Depending on the factors stated above the staff requirements should be worked out for
Table 4.1: Requirements of Attendants and Caretakers for a Twenty-two Seat Community Toilet

<table>
<thead>
<tr>
<th>Duty Hours</th>
<th>Attendant</th>
<th>Caretaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning shift</td>
<td>5 A.M. - 9 A.M.</td>
<td>2 with split duty hours</td>
</tr>
<tr>
<td>Day shift</td>
<td>9 A.M. - 5 P.M.</td>
<td>1</td>
</tr>
<tr>
<td>Evening shift</td>
<td>5 P.M. - 9 P.M.</td>
<td>Same as in morning shift</td>
</tr>
<tr>
<td>Night shift</td>
<td>9 P.M. - 5 A.M.</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

* In a non-residential area an additional caretaker for night-shift will be needed.

12. An indicative requirement of attendants and caretakers for a twenty-two seat toilet block (with about 1000 users) in a residential area is given in table 4.1.

Stores Requirements

13. To ensure continuous availability of spare parts, tools, consumable and equipment, 30 days requirement should always be kept in the store attached to every toilet block under the control of the caretaker.

14. The cleaning materials required per month for a 11-seat toilet block for about 500 users per day are given in Annex 11. In addition, water taps, washers for taps, bulbs, tube lights and fuse wire for electricity, mugs or jars for the users and necessary tools for replacing washers, water taps and repairing minor leakages should be kept in store at the site. It is also advisable to keep a spare water pumping unit. To avoid pilferage and theft, water taps, bulbs, tube lights, water containers etc should carry identification marks on them and, at the time of replenishment, the unserviceable materials should be deposited.

Creating Awareness Among Users

15. The maintenance staff on duty at the toilet block should give all possible assistance and guidance to the users and educate them on the proper use of the toilet. This should cover aspects like squatting posture to prevent excreta and urine falling on the floor or sides of the latrine pan or urinal and also how to flush the excreta. It should also be brought to the user’s notice, from where and in which container water should be taken for flushing and anal cleansing.

16. Some people may not have the habit of washing their hands after defecation. They should be encouraged to wash their hands after anal cleansing by explaining the health benefits from doing so. In community toilets only soap or soap powder should be allowed. Other materials such as ash or soil may choke the wash basins and drains.

17. Education of children on the use of toilets is essential. Women accompanying children should be advised to train their children. Unaccompanied children should be guided and educated by the maintenance staff on duty.

18. Toilet users should be educated to use water or soft paper only for anal cleaning. They should not be allowed to use other materials for anal cleaning as these may cause choking of the drains and traps.

19. To increase the awareness among users, health and hygiene related messages should be prominently displayed within the community toilet complex on display boards. Annex 12 gives some user guidelines for display on boards and on the inside of toilet doors.

Monitoring by Local Body

20. The local body should set up a monitoring cell to ensure proper operation and maintenance of toilets constructed. The monitoring should be used as a management tool to identify problems and to initiate necessary administrative measures. A monitoring format is given in Annex 13.
Chapter 5

Institutional and Financial Arrangement

1. The local bodies play a pivotal role in planning, construction, operation and maintenance of community toilets. Appropriate institutional and financial arrangements are required not only to improve the investment and operational efficiencies but also to promote a sense of ownership among the users and right to demand for an efficient service. This chapter reviews the current institutional and financial practices, their merits and demerits and suggestions for improved practices.

INSTITUTIONAL ARRANGEMENTS

Project Report Preparation

2. In most cases, the local body, without consulting the community, selects the site, decides on the type of facilities to be provided and prepares engineering designs. In a few cases, local bodies engage a consultant or NGO to prepare the project report. In general, detailed project reports as described in chapter II are rarely prepared.

3. The project reports prepared by local bodies often follow a supply or target-driven engineering approach and do not normally reflect users' preferences and willingness to participate or pay for capital or operation and maintenance costs. Non-involvement of users in project preparation discourages a sense of ownership among users and results in dissatisfaction and sub-optimal use of facilities. On the other hand, some of the projects prepared by CBOs or NGOs or consultants based on users' preferences and willingness to participate, have proved to be sustainable in the long run.

4. As explained in Chapter II, the project report preparation requires multi-disciplinary skills such as technical, social, institutional and financial. Such multi-disciplinary skills are generally not available within the local bodies. Therefore, local bodies may consider one of the following arrangements:

- assigning the task to a team consisting of a municipal engineer and a social scientist, who could be engaged as a short term consultant from a local NGO or university.
- assigning the task to an external agency (NGO, CBO or consultant) with the requisite multi-disciplinary skills.

Construction

5. In most cases, local bodies award the contract for construction to either a contractor or an NGO. In a few cases, contracts are given directly to the community through their existing community structures, wherever they have been able to mobilize capital cost sharing. The engineering division of the local body or state agencies like the Public Health Engineering Department or State Water Supply and Sewerage Board or State Urban Development Agency assume the responsibility to supervise the quality of construction, depending on the scheme under which the particular community toilet is constructed.

6. Lack of adequate supervision, resulting in poor quality of construction, is a common issue.
Split responsibility, construction by one agency and O&M by another, is sometimes another reason for poor quality of construction. In such cases, the O&M agency does not take the responsibility for routine civil maintenance and repairs and awaits interventions by local bodies, which often do not come in time. The resultant poor maintenance causes user dissatisfaction and non-use of facilities. On the contrary, construction by CBOs and NGOs with the active involvement of the community offers advantages such as:

- users have an increased sense of ownership and consequently the quality of construction improves;
- reduced capital costs due to low overheads and no profit margin; and
- improved capacity within the community resulting in better maintenance.

7. Local bodies should evaluate alternative construction arrangements and choose the most appropriate option that will ensure good quality of construction and proper use of the facilities constructed. Three possible arrangements are discussed below:

- Construction by a CBO or NGO, for reasons stated above, should be given preference. However, these voluntary bodies may not have adequate technical skills and local bodies should provide the required technical guidance.

- The second alternative is construction by an external agency or contractor who is also willing to enter in to a long term O&M contract, for a minimum period of ten years.

- If the above options are not feasible, the construction work alone may be awarded to a contractor or an NGO. To ensure quality of construction, local bodies should involve the agency selected for O&M in supervising the construction.

8. Irrespective of the option chosen, the local bodies should closely supervise the quality of construction. A clear and unambiguous memorandum of understanding (MOU) or contract between the local body and construction agency should be prepared. A typical format for the MOU is given in Annex 14. Necessary changes may be made in the MOU depending on the scope of work and field conditions.

**Operation and Maintenance**

9. Sanitation is considered as one of the basic services to be provided by local bodies, free of cost. Consequently, community toilets in most cities were traditionally built, operated and maintained by the respective local bodies. However, due to inadequate financial and human resources, and inappropriate institutional incentives, most of the community toilets are very poorly maintained and in some cases abandoned by users within a few years of construction. To overcome these limitations, several local bodies have started assigning the O&M responsibilities to either an external agency (contractor or NGO) or directly to the communities (CBOs). These agencies operate the toilets on a ‘pay-and-use’ basis, as per the conditions defined in a Memorandum of Understanding (MOU) between them and the local body. The following paragraphs discuss the merits and demerits of these institutional options. The main guiding factor for selecting a particular option should be the users' willingness to pay for and participate in O&M.

10. **O&M by municipality**: As stated above, the municipality operated toilets are very poorly maintained and abandoned within a few years of construction. The main reasons for this are:

- Normally local bodies do not recruit or assign exclusive staff for operation and maintenance of community toilets. Municipal scavengers, in addition to their regular street sweeping job, are generally assigned the responsibility to clean the community toilets. Similarly, the respective ward sanitary inspectors are responsible to supervise the scavenger’s job. Consequently, very little attention is paid to the upkeep of community toilets. Also as scavengers have strong unions, any disciplinary action may entail legal battles or strikes, leading to a
virtual breakdown of the town's conservancy system.

- Mostly, these toilets are operated as 'No-Pay & Use' type and the cash strapped local bodies find it difficult to provide sufficient funds for O&M.
- Inadequate staffing for maintenance and supervision, lack of accountability for performance and lack of a sense of ownership among users are some of the other factors contributing to poor upkeep.

11. In view of the above reasons, it is suggested that local bodies should operate toilets on a 'pay-and-use' basis by collecting user charges to cover full O&M costs and assign adequate staff, consumables, tools and equipment, etc.

12. O&M by external agencies (contractors or NGOs): Several local bodies have entrusted the operation and maintenance, on a 'pay-and-use' basis, to private contractors and NGOs. A MOU between the agency and the local body, defines the terms and conditions of this contract. Typically the local bodies are responsible for major civil repairs and maintenance, and the external agencies are responsible for day-to-day operation and maintenance. In some cases instead of carrying out repairs, local bodies pay the agency an agreed fixed amount per toilet seat per year as an annual maintenance fee. In a few cases, local bodies treat the 'pay-and-use' toilets as a profit making proposition and charge the agencies an annual fee.

13. Following are some of the merits and demerits in assigning the O&M role to an external agency:

Merits:
- the local body is relieved of managerial and financial responsibilities; and
- users are likely to develop a sense of ownership, as they pay for O&M services, and demand better services as a matter of right.

Demerits:
- When the contract is for a short period, say one year or so, the contractor has no incentive to render good and effective services and also to undertake repairs and maintenance; and
- In the absence of strict supervision and monitoring by local bodies, the contractor is normally under no pressure to perform as per the terms and conditions stipulated in the MOU.

14. Some guidelines for local bodies in using external agencies for O&M are given below:
- Preference should be given to a reputable local NGO. In most cases they would be concerned about the loss of credibility resulting from failure to meet their contractual obligations.
- For ensuring compliance with contract conditions by a private contractor or NGO, local bodies should carry out regular supervision and monitoring. A format for Monitoring by Local Bodies is given in Annex 13.
- Users charges should be fixed such that they fully cover O&M costs and leave a reasonable profit for the contractor. Local bodies should not look upon a community toilet as a profit center but as an essential facility for a low income community.

15. O&M by Community: In some cases, particularly in slums where the Government of India's Urban Basic Services Programme (UBSP) is effective, the users themselves operate and maintain the toilets, on a 'pay-and-use' basis through their existing community organizations (CBOs). This third alternative arrangement has several advantages:
- users have a real sense of ownership as they are wholly responsible for O&M;
- users have total control on the level of service;
- O&M costs are kept to the minimum as some of functions are looked after by the community members on a voluntary basis; and
d. local bodies are relieved of the financial and managerial burden.

16. NGOs can often serve as an effective intermediary between the local body and the community in mobilizing the local community and preparing them to render an effective role. There are instances of community toilets being wholly maintained by the local communities themselves with minimal financial and technical support from the local body. A case in Kanpur is described in Annex 15.

Training

17. To improve investment and operational efficiencies, all relevant municipal staff (engineers, sanitary inspector and supervisors) and staff responsible for O&M should be given proper training in the following aspects:

- Role of community toilets in improving environmental sanitation conditions and details of the program under implementation;
- Relevance and importance of involving the community in project preparation as discussed in chapter II;
- Merits and demerits of alternative institutional and financial arrangements;
- Need and importance of proper upkeep of the toilet blocks;
- O&M staff (supervisors, caretakers and attendants) should be trained in O&M requirements and some of the routine repairs related to water supply and electricity; and
- Health educators should be briefed about the project and how the health and sanitation education programme can be carried out.

FINANCIAL ARRANGEMENTS

18. As stated at the beginning of this chapter, the local bodies because of their supply or target-driven approach and perennial financial constraints, are not able to construct adequate numbers of community toilets and cannot sustain the investments by providing sufficient funds for O&M. Therefore, there is a need to review current financial arrangements, particularly the potential for capital and O&M cost sharing by the users.

Capital Costs

19. The capital costs are invariably met fully by local bodies through their own resources and/or grants from state and central governments. In some cases industries and philanthropists have contributed toward the capital costs. As part of some special schemes such as UBSP (Ministry of Urban Affairs and Employment, GOI) and promotion of night-soil based biogas plants (Ministry of Non-conventional Energy Sources, GOI) local bodies are eligible for subsidies not only for construction of toilets, but also in the case of biogas digester for long term operation and maintenance. The local bodies can also obtain long term loans from the Housing and Urban Development Corporation (HUDCO), a Government of India Undertaking; upto 50% of the capital cost. There are a few cases, as discussed in Annex 15, where communities also contribute a small percentage of capital costs.

20. The guiding principles for capital cost sharing should not only be to mobilize additional financial resources but also to promote a sense of ownership among the users. Therefore, capital cost sharing by the community should be encouraged to the extent that they value their contributions. Local bodies should learn from the experience of cities like Bombay, Ahmedabad etc, and explore opportunities to mobilize additional resources through sponsorship from industries, trade and philanthropists.

21. The estimated cost of the project should be worked out on the basis of the Schedule of Rates followed by the local authorities to avoid cost over-run. The rates of items which are not specified in the Schedule of Rates should be obtained from the market. The Schedule of Rates does not reflect the field reality, the market rates must be taken into account for working out the estimated cost. Since a community toilet block can be constructed in 6-9 months, there is no need to make a
charges should be fixed by the local bodies in consultation with the community and the agency responsible for O&M. A family desirous of paying monthly charges may be issued a monthly pass as per the proforma given in Annex 22.

27. **Toilets in non-residential areas**: Collection of user charges per use per person is most popular in places like railway stations, bus/truck/taxi stands, tourist centers, market places etc, where people are willing to pay higher charges. Some of the typical user charges prevalent in different places are: Rs. 1 per person per use of toilet; additional Rs. 1 per use of bathing (where special bath rooms have been built in some tourist places Rs. 3 per use is charged) and facilities for washing clothes; and Rs. 0.5 per use of urinal. These charges should be reviewed periodically to cover the full O&M costs, including civil repairs.

**Cross-Subsidy**

28. Income from user charges of a community toilet depends on its location and type of users. For example, experience shows that community toilets near railway stations, tourist centers, bus/truck/taxi/cycle rickshaw stands and busy markets, can generate an income over and above the O&M costs. The income from community toilets in residential low income settlements can be lower than the O&M costs. Hence, O&M costs of a toilet which is not self-supporting can be cross-subsidized by toilets in commercial areas, if a single agency is assigned the responsibility to maintain a group of toilets.

**Need for Legislation for Imposing User Charge**

29. In some States, community toilets cannot be operated on a 'pay-and-use' system because local body is requested by the Municipal Act to provide sanitation services free of charge. Where such a provision exists the Municipal Act or bye-laws should be modified to enable the local bodies to levy a service charge for the use of a community toilet.
ANNEXES
List of Annexes

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3. A Format for Assessing the Number of Other Categories of Users and Need for A Community Toilet
4. An Interview Schedule for Other Categories of Users.
5. A Check List of Information to be Collected from the Government/Local Authority/NGOs etc.
6. Suggested Contents of A Project Document
7. The Design of a Model Septic Tank
8. Design of the Soakage Pits
9. Check Points for Supervising the Construction
10. Check Points for the Supervisor Looking After Operation & Maintenance of the Community Toilet Block
11. Monthly Requirements of Cleaning Materials for a 11-Seat Community Toilet
12. Guidelines for the Users of the Community Toilet
13. Check List for Monitoring by the Local Body
15. People’s Participation in Improving Sanitation - A Case of Kanpur Slums
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19. A Typical Bill of Quantities for a Soakage Pit
20. A Typical Bill of Quantities for a Chamber
21. A format for Assessing Annual O&M Costs
22. A Format of a Monthly Pass
A FORMAT FOR SURVEY OF GENERAL HOUSEHOLDS AND PAVEMENT DWELLERS
(Target Group: All households and pavement dwellers)

(1) Name of the interviewee: ________________________________
(2) Address ________________________________
(3) Household latrine:
   Available □   Not available □
(4) If household latrine is not available, the reasons:
   Lack of Space  Cannot Afford  Any other (Please specify)

(5) Place used for defecation ________________________________
(6) Need for Community toilet
   Yes □  No □
(7) Number of persons in the household
   Male ________________________________
   Female ________________________________
   Children ________________________________
(8) Monthly Household Expenditure
   Upto Rs.1250/- □  Above Rs. 1250/- □
(9) Remarks (If any)
   ____________________________________________
   ____________________________________________
   ____________________________________________

Note: ✓ appropriate boxes.
A FORMAT FOR THE SURVEY OF RESIDENTS' PREFERENCES
(Target Group: Only 25% of the households and pavement dwellers without own latrine or access to sanitation facility)

1. Name of the interviewee ____________________________________________

2. House No. & Address ______________________________________________

3. No. of persons in the household
   Male □    Female □    Children below 10 Yrs. □

4. No. of household members likely to use the facilities.

   Male □    Female □    Children □

   Toilet
   Urinal
   Bath
   Washing Area

5. If the household does not want to use the facility, reason(s):

   ________________________________________________________________
   ________________________________________________________________

6. Whether willing to pay for the use of the facility
   Yes □    No □

7. If "YES", preferred periodicity and amount of payment

   Monthly for all members of the family
   Rs. 10-15 □    Rs. 16-20 □    Rs. 21-30 □

   Per person use of toilet facilities
   25 Paise □    50 Paise □    100 Paise □

   Per person use of bathroom and washing facilities
   50 Paise □    100 Paise □
8. Willing to share capital costs? YES/NO

9. If YES, how much per family?

10. Preferred location of community toilet (Identify the location):

11. Preferred time (hours) of use:

<table>
<thead>
<tr>
<th></th>
<th>Toilet</th>
<th>Bath</th>
<th>Washing area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Any belief that members of the household will not like to sit for defecation facing a particular direction; and any other likes and dislikes.

13. Material used for anal cleansing after defecation

   Water  
   Soft paper  
   Any Other (Please specify)

14. If given, would you like to use soap to wash your hand?

   Yes  
   No  

Note: √ appropriate boxes.
A FORMAT FOR ASSESSING THE NUMBER OF OTHER CATEGORIES OF USERS AND NEED FOR A COMMUNITY TOILET FACILITY

1. Discussions with Railway/Hospital/Bus Terminus authorities and Trade Association to find out the number of people visiting the area (floating population) and the type of facilities that would be useful. (Consult appropriate authorities depending on the proposed location.)

2. Pattern of arrival/departure of floating population

   Peak hour

   No. of visitors during the peak hour

   Arrival/Departure during night

   Yes ✅ No ✗

3. Assess the number of users like rickshaw pullers, hand-cart pullers, auto-rickshaw drivers, taxi drivers, petty shop keepers etc.

4. At present, any facility available for sanitation near the proposed site?

   Yes ✅ No ✗

5. If YES, are they adequate?

   Yes ✅ No ✗

   (Give also a brief description of the facilities)

6. Remarks

   ""

   ""

   ""

   ""

   Note: ✅ appropriate boxes.
AN INTERVIEW SCHEDULE FOR
OTHER CATEGORIES OF USERS
(5% of the users to be covered)

1. Name of the Interviewee ____________________________

2. Profession ____________________________

3. Purpose of visit ____________________________

   Business [ ]  Social [ ]  Hospital [ ]  Religious [ ]

   Any other (Please specify) ____________________________

4. Do you think sanitation facility near this public utility is necessary?
   If essential or desirable, what facilities are required the most:

<table>
<thead>
<tr>
<th>Essential</th>
<th>Desirable</th>
<th>Not Req'd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urinal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Would you pay for the use of the facility?
   Yes [ ]  No [ ]

6. If yes, preferred amount of payment per use:

<table>
<thead>
<tr>
<th>25 Paise</th>
<th>50 Paise</th>
<th>100 Paise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom &amp; Washing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urinal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A CHECKLIST OF INFORMATION TO BE COLLECTED FROM THE GOVERNMENT/LOCAL AUTHORITY/NGOs etc.

1. Site for locating the community toilet block (selection to be done in consultation with the local authority and the community).

2. Number of pavement dwellers, rickshaw/hand cart pullers, taxi drivers or any other similar categories of people, likely to use the community toilet.

3. i) If the proposed site is to be filled up, up to what depth? (site topography map to be prepared, if necessary).
   ii) Type of soil strata (soil characteristics) up to 3 m below the ground level
   iii) Whether the site subjected to water logging or flooding?
   iv) Ground water level in different seasons of the year

4. (i) If water supply at the community toilet block can be obtained from the municipal main, whether it is possible to meet the requirement fully and water pressure is adequate or pumping will have to be carried out?
   (ii) If water supply cannot be obtained from the municipal system, what alternative arrangements can be made?

5. Whether electricity is available for lighting the toilet block?

6. (i) If sewer exists, is it feasible to connect the community toilet to it?
   (ii) If the toilet block cannot be connected to the sewer, what arrangements can be made for disposal of the sewage and the wastewater?
   (iii) Whether sufficient land area is available, either at the proposed site of the toilet block or near by, for locating a wastewater disposal system?

7. Whether the local authority itself would like to operate and maintain the toilet block or would it like to hand the facility over to a non-government organization (NGO) or community or any other agency? (Study how the existing community toilets are being operated and maintained).

8. If the State government has issued any directions to the local authorities recognizing the NGOs or agencies for construction and operation and maintenance of community toilets, list the organisations/agencies. Collect the copies of government directions.

9. (i) If the NGOs or other agencies are available for construction and operation and maintenance of the community toilet block list them. Also collect information about their credentials including experience and the infrastructure available with them.
   (ii) If the local community is willing to operate and maintain the community toilet block, study their capability.

10. (i) Collect the current Public Works Department's Schedule of Rates or similar other sources which are being followed by the local authority in preparing the estimates of civil/sanitary works.
(ii) Collect the rates of skilled and non-skilled labour charges and the materials needed for construction of the proposed toilet block.

11. (i) Whether the local authority would meet the capital cost from its own resources? If it would not, list the agencies which might finance the project.
(ii) Ascertain the proportion of subsidy and loan with terms and conditions from the agency which might finance the project.

12. (i) Whether it is feasible to operate the community toilet on a 'Pay & Use' basis?
(ii) If the entire operation and maintenance costs cannot be met from user-charges, enquire from the agencies being considered for operation and maintenance, whether they would be able to operate and maintain it by cross-subsidizing?
(iii) If it can not be maintained by cross-subsidizing, ascertain whether the local authority is willing to meet the short-fall.

13. If the local authority desires to operate the toilet on a 'No-Pay & Use' basis, enquire whether it is willing to meet the operation and maintenance cost also from its own budget.

14. Whether the low cost sanitation programme to provide toilets in individual houses is going on or is likely to be taken up in the near future?

For community toilets near railway station, bus terminal, hospital, etc.

15. Is the public utility ready to provide land and/or bear/share capital costs for the construction of community toilet?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide Land?</td>
<td></td>
</tr>
<tr>
<td>Bear the entire capital cost?</td>
<td></td>
</tr>
<tr>
<td>Ready to share capital costs?</td>
<td></td>
</tr>
</tbody>
</table>

If yes, indicate % of costs ____________________________

16. Is the public utility ready to levy a user service charge for the use of the facility on a per use basis to meet the operation & maintenance costs?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

17. Any additional information:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
SUGGESTED CONTENTS OF A PROJECT DOCUMENT

- Background
- Field Data & Situation Analysis
- Design & Construction details (including Designs, Drawings & Bill of Quantities).
- Time Schedule for Construction
- Organisational Arrangements for Construction and Operation & Maintenance (Recommendations on who would be responsible for construction & who will be responsible for operation & maintenance).
- Operation & Maintenance (Maintenance Schedule, Staff Requirements, Consumables Required).
- Finances (Capital & Recurring Costs, Financing Mechanism, Cost Recovery, Cross-subsidy, Recommendations on Financial Involvement of Users in Capital and Operation & Maintenance costs).
- Suggestions for & Changes in Municipal Bye-laws to Improve Sustainability

ANNEX - I Survey Information which forms the Basis for the Project Report (in tabular form).
ANNEX - II Topography Map of the Site
ANNEX - III Town Map Showing Locations of the Existing & Proposed Community Toilets & the Area to be Served.
ANNEX - IV Working Drawings of the Proposed Community Toilet & Related Structures.
ANNEX - V Bills of Quantities for all Toilet, Septic Tank/Soakage Pit & Allied Civil, Mechanical & Electrical Works.
THE DESIGN OF A
MODEL SEPTIC TANK

The septic tank should be designed as per the criteria laid down in the Manual on Sanitation by CPHEEO, Government of India. These design criteria are:

(i) Considering the volume required for sludge and scum accumulation, the septic tank should have 1 - 2 days of wastewater retention.

(ii) The accumulated sludge and scum should occupy only half or maximum two-thirds of the tank capacity at the end of the design storage period.

(iii) For users over 100, two septic tanks, each designed for half, of the total calculated capacity should be constructed in tandem. This arrangement permits the flow to be passed through one unit, while the other is being de-sludged.

Example

The community toilet has 11 toilet seats, with one seat for children, and 3 urinals. The number of users is 550. Two septic tanks, each for 275 users are to be designed.

Wastewater including urine and water used for anal cleansing, flushing and latrine floor washing entering the septic tank is assumed as 8 liters per user.

\[
\begin{align*}
\text{Total wastewater entering the septic tank} &= 8 \times 275 \text{ liters per day} \\
&= 2200 \text{ liters per day}
\end{align*}
\]

\[
\begin{align*}
\text{Capacity of the septic tank assuming 2 days} &= 2 \times 2200 \text{ liters} \\
&= 4400 \text{ liters or 4.4 m}^3
\end{align*}
\]

\[
\begin{align*}
\text{Volume of the sludge storage (assuming sludge cleaning interval as one year and sludge accumulation rate as 0.00021 m}^3\text{ per capita per day)} &= 0.00021 \times 275 \times 365 \text{ m}^3 \\
&= 21.08 \text{ m}^3
\end{align*}
\]

\[
\begin{align*}
\text{Volume of the scum (taking the depth of scum as 225 mm and size of the septic tank as 10 M x 3 M)} &= 10 \times 3 \times 0.225 \text{ m}^3 \\
&= 6.75 \text{ m}^3
\end{align*}
\]

\[
\begin{align*}
\text{Total volume of the sludge and the scum} &= (21.08+6.75) \text{ m}^3 \\
&= 27.83 \text{ m}^3
\end{align*}
\]

\[
\begin{align*}
\text{or, say,} &= 28 \text{ m}^3
\end{align*}
\]

\[
\begin{align*}
\text{Capacity of the septic tank (Assuming accumulation of the sludge and scum as two-thirds of the total septic tank capacity)} &= 28 \times 3/2 \text{ m}^3 \\
&= 42 \text{ m}^3
\end{align*}
\]

Taking the depth of the septic tank below its top liquid level as 1.4m, size of the tank works out to be 10mx3m. After providing free board of 30 cm, total depth of the septic tank should be 1.7 m.
DESIGN OF SOAKAGE PITS

[Based on Indian Standard – Code of Practice for Installation of Septic Tanks; Part 2: Secondary Treatment & Disposal of Septic Tank Effluent - IS : 2470 (Part 2) - 1985.]

Discharge from a community toilet for 550 users @ 8 liters/user

Taking the rate of effluent application and percolation rate of the soil where soakage pits are to be located as $521/m^2$/day and 15 minutes, surface area (effective side wall area) required

Taking the internal diameter of the pit as 2.5 m, depth as 2.2 m, lining thickness as 225 mm and thickness of coarse aggregate filling all-round the lining as 75 mm, effective surface area of the pits

The number of soakage pits needed comes to 4.

If the inlet pipe to soakage pit is 40 cm below ground level, total depth of the pit comes to $2.2 + 0.40 + 0.15 = 2.75 m$ below the ground.
CHECKPOINTS FOR SUPERVISING THE CONSTRUCTION

1) Water supply, sanitary and electricity fixtures and other materials used are of the quality specified in the design or of relevant standard specifications.

2) Prescribed specifications and drawings have been adhered to. The work is neat and workmanship is good.

3) If the work is done departmentally or through labour contract, quantities of various materials used are as per the specified requirements.

4) Cement has been used in specified proportion in the concrete, brick work and plaster.

5) RCC work has been provided with specified reinforcements. Pinning has to be carried out in such a manner that there are no voids.

6) Mosaic flooring and the dado have been laid as per the specifications, rubbed and polished well to granolithic finish.

7) Flooring has a slight slope towards the squatting pan in the case of latrine cubicle. In the case of other areas the slope should be towards the drainage points.

8) Curing of all cement works has been done as per the specifications.

9) Spindles for hanging the doors have been fixed firmly and the doors have been provided with bolting arrangement, inside and outside.

10) Tube well has been bored upto the required depth.

11) Water reservoirs are water tight.

12) There is no leakage in the water pipe lines and drainage pipes.

13) i) Squatting pans and traps installed are of designs specified for a pour flush toilet and these have been fixed properly so as to provide 20 mm water-seal.
   
   ii) In case the community toilet block is connected to the city sewer, check if the master trap has been provided before the connection of the sewer.

14) Foot-rests have been fixed at the proper place and at an angle to make them slightly away from the squatting pan in the front.

15) Invert of the outlet pipe in the septic tank is 50 mm below the invert of the inlet pipe.

16) Ventilating pipes of at least 100 mm diameter have been provided in each septic tank.

17) For commissioning, the septic tank has been filled with water upto outlet level and seeded with a small quantity of sludge from some other septic tank in operation or digested cow dung.
18) If the community toilet block has been provided with septic tanks, only the toilets and urinals are connected to the tank. Other wastewater is disposed of separately.

19) Proper gradient has been provided in sewers and the drains. Inside surface of the drains has been made smooth.

20) Manholes and drains for carrying sewage are well covered to prevent emission of foul odour.

21) Adequate electric light points have been provided inside and outside the community toilet.

22) All surplus materials have been removed and the site cleared and dressed.
CHECK POINTS FOR THE SUPERVISOR
LOOKING AFTER OPERATION AND MAINTENANCE OF
THE COMMUNITY TOILET BLOCK

<table>
<thead>
<tr>
<th>Daily Check Points</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is everyone on duty at the time of the visit?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the instructions given earlier been complied with?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the deficiencies noticed in the earliest visit been removed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the latrine seats, urinals, wash hand basins, tiles, mosaic dado, floors, etc. clean?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are they not becoming yellow or getting coated?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have all the doors proper bolting arrangement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do the building and doors/windows etc. need any repairs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there adequate quantity of water available during all the 24 hours?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the pumping plant functioning properly?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there any leakage of water or seepage at any place?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there any chokage or obstruction in the flow of excreta or waste water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the septic tanks or soakage pits were over flowing?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are all light points in working order?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do the electric wiring, boards, switches, etc. need any repairs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have soap powder and cleaning materials available at the community toilet block?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has soap powder being given to users for washing their hands?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Check Points</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>Is the community toilet block clean (both inside and outside)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any cob-webs in the community toilet block?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any scribbling on the walls, doors, etc.?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there any foul smell at any place?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the plantation done in the premises of the community toilet block being looked after well?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the box with locking arrangement for collecting the user charges been available and placed at the appropriate place?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the daily income from user-charges was as per target?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If not, give reasons for shortfall?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the complaint and suggestion book and complaint box been available at the community toilet block?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the complaints and suggestions recorded in them been attended to?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Monthly Check Points**

1. Does the community toilet block need white/colour washing and painting?     |     |    |

2a. Have the sign boards and boards displaying use-instructions been fixed at the appropriate places properly? |     |    |

2b. Do they need re-painting                                                |     |    |
## MONTHLY REQUIREMENTS OF CLEANING MATERIALS FOR A 11-SEAT COMMUNITY TOILET

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bleaching powder</td>
<td>10 kg</td>
</tr>
<tr>
<td>2. Vim or any other cleaning material</td>
<td>10 kg</td>
</tr>
<tr>
<td>3. Phenol or any other disinfectant liquid</td>
<td>4 liters</td>
</tr>
<tr>
<td>4. Naphthalene balls</td>
<td>8 kg</td>
</tr>
<tr>
<td>5. Floor wipers</td>
<td>2 nos.</td>
</tr>
<tr>
<td>6. Tools to remove chokage</td>
<td>1 set</td>
</tr>
<tr>
<td>7. Brushes</td>
<td>4 nos.</td>
</tr>
<tr>
<td>8. Brooms</td>
<td>4 Nos.</td>
</tr>
<tr>
<td>10. Dusters</td>
<td>6 Nos.</td>
</tr>
<tr>
<td>11. Gum boots</td>
<td>1 pair*</td>
</tr>
<tr>
<td>12. Hand gloves</td>
<td>1 pair*</td>
</tr>
<tr>
<td>13. Hydrochloric acid (diluted)</td>
<td>1 liter</td>
</tr>
<tr>
<td>14. Soap powder to wash hands</td>
<td>25 kg.</td>
</tr>
</tbody>
</table>

* One set of tools would last about 3 months
* Gum boots and hand gloves should be supplied to each attendant. These would last 3 - 4 months.
@ Brushes and buckets are generally replaced after about 2 months.
GUIDELINES FOR USERS OF THE COMMUNITY TOILET

1. Stand in queue if other users are waiting.
2. Ask the attendant to clean the toilet before use, if it is not clean.
3. Sit in such a position for defecation, that the human waste falls, as far as possible inside the squatting pan and does not foul the sides.
4. Fill the mug provided in the latrine with water for ablution and flushing.
5. Before use, pour a little quantity of water to wet the pan so that excreta slide smoothly into the pit.
6. Use water or toilet paper for anal cleansing. Do not use any other material like stone, mud, thick paper, grass etc. for anal cleansing.
7. Pour water from the mug to flush the excreta after use.
8. Wash hands, using soap after defecation at the assigned place.
9. Do not throw lighted cigarette butts in the pan.
10. Take bath quickly, if others are waiting.
11. Do not wash clothes in the bathroom. Use the washing area.
12. Do not make any scribbling on the walls or doors of latrine.
13. If you have any complaints or suggestions, enter them in the complaint register available with the caretaker or drop them in the complaint box.
A CHECK LIST FOR MONITORING OF O&M BY THE LOCAL BODY

1. Is the toilet block being operated and maintained well? Have water and electricity been available?

2. Are users satisfied with the service?

3. (i) Are all the intended users availing the facility? If they are not, which section of the community is not using and why?
   (ii) Do health and sanitation education programs need to be stepped up to motivate those who are not using the facility?
   (iii) If 'per person per use' payment system is a deterrent, are the users willing to pay on a monthly basis for the facility?
   (iv) Any suggestions for use of the facility by all the targeted users?

4. If the toilet block is not functioning due to any reason like chokage of sewer, non-availability of water supply etc., have the deficiencies been removed expeditiously?

5. (i) Is round the clock attendant service (where applicable) ensured?
   (ii) Is the staff posted adequate?

6. Has the complaint book been available at the toilet block? Are there any complaints about the operation and maintenance of the toilet block and whether these are being attended to quickly?

7. Are there any problems or constraints? Are there any suggestions to resolve them or for improving the functioning of community toilet block?
A TYPICAL AGREEMENT
BETWEEN THE LOCAL BODY AND
CONSTRUCTION/O&M AGENCY

MEMORANDUM OF UNDERSTANDING BETWEEN
(Name of Municipality or Utility)
AND
(Name of Construction/O&M Agency)

This agreement made on this... day of (month and year) between (Name and designation of person authorized to sign on behalf of the local body or utility organization and name and address of the organization), (hereinafter called the First Party) of the one part and (name and address of the contractor), (hereinafter called the second party) of the other party. The terms, the 'FIRST PARTY' and the 'SECOND PARTY' wherever used or occurring in these presents shall always, unless expressly or by necessary implication excluded by or contrary to the subject and context, mean and include their respective successors and assignees.

WHEREAS the First Party has decided to get a Community Toilet Complex constructed in (location of toilet and name of the town) to provide facility to the public, and has approached the Second Party to construct, operate and maintain them.

WHEREAS the Second Party at the instance of the First Party has agreed to undertake the construction, operation and maintenance of the aforesaid community toilet complex.

WHEREAS the parties hereto are desirous and have found it necessary and expedient to record the terms and conditions in respect of the aforesaid work into an agreement and the First party has obtained the necessary approval of the competent authority as required by law/rules for the purposes.

Now, these presents witness and it is hereby and between the Parties hereto as follows:-

1) The Second Party shall construct a public toilet complex comprising of water flush toilet with urinal, bathing and washing facilities at (location of toilet) for the First Party as per detailed plans and estimates which are to be considered as part and parcel of this MOU.

<table>
<thead>
<tr>
<th></th>
<th>W.C.</th>
<th>Urinal</th>
<th>Bathroom</th>
<th>Washing Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gents</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ladies</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Children</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

(Fill in the number of facilities to be provided in spaces (-) in the table above)

2) At the site of the toilet complex, the Second Party shall also construct a Caretaker Room of appropriate size required for the operation and maintenance of the toilet complex.

3) The First Party has provided to the Second Party the detailed site plans where the toilet complex is required to be constructed.

4) The Second Party, after receipt of the site plans has prepared the detailed drawings of the toilet complex and got them approved by the First Party.

5) After the drawings have been approved, the Second Party prepared the estimates to determine the cost, and these estimates and specifications were submitted to the First Party which has given its approval. The approved drawings, estimates and specifications are deemed to be the part of this agreement.

6) The aforesaid cost estimates have been based on the current PWD or Municipal Schedule of Rates applicable in (name of town/city) and items not included in the Schedule of Rates have been analyzed as stated below in this para. Current Schedule of Rates means the Schedule of Rates applicable on the
date of submission of the estimates by the second party to first party for the construction of the complex. For items for which no rates exist in the aforesaid PWD or Municipal Schedule of Rates, the rates will either be derived from market rates of labour and materials.

7) The work will be executed as per the plans and estimates prepared by Second Party and approved by the First Party. The payment shall be made as per the current schedule of rates and rates sanctioned by the First Party. No increase in rates will be given and Second Party agrees to carry out the work at these rates.

8) The Second party shall be entitled to get a payment of 20% of the estimated cost as implementation and management charges including fee for the architect and also fee for the preparation of detailed estimates and drawings, and to meet promotion, education, publicity, implementation and establishment costs and other overhead expenses. The total estimated cost of the toilet complex has been fixed as per para (6) & (7) above and implementation charges as Rs. ......... (cost in words also). The 20% implementation charges will be also payable to the Second Party on costs/ enhanced cost of additional or extra works. The first party shall make an advance payment of 20% to the second party as a mobilization advance which shall be adjusted while making the payment against the running bills.

9) The First Party shall have the right to change the site, number of latrines seats and urinals, bathrooms and washing platforms in the toilet complex. However, the First Party shall pay to the Second Party to cover fully all the extra expenses with 20% implementation and management charges as described in para 8 above incurred by the Second Party due to changes made by the First Party.

10) The Second Party shall arrange all materials including cement and M.S. rods/bars to construct community toilet complex as per approved estimates and drawings to the satisfaction of the First Party.

11) After approval of the drawings and estimates (as per 7 above), receipt of the first advance as mentioned in para (8) above and handing over undisputed site where the complex is to be built, the Second Party shall take up the construction and complete the construction of toilet complex/toilet complexes within .........months from the date of the First advance, approval of drawings and estimates and handing over of site and sites whichever is later. In the event of failing to complete the work within the stipulated period, the Second Party shall be liable to pay as compensation an amount equal to one percent of the estimated cost of the whole work for every week of delay provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed ten percent of the estimated cost of the whole work.

12) It is hereby agreed that any change in the design and specifications of toilet complex for which drawings, specifications estimates have been approved by the First Party can be made with the mutual consent of both the parties. If any extra work or works is or are to be done at toilet complex the same shall be carried out by the Second Party as desired by the First Party. The payment due to change in design and specifications and for extra work or works will be made by the First Party to the Second Party at the current PWD or Municipal Schedules of Rates and market rates of labor and materials as described in para (6) and (7) above. The Second party shall also be entitled to get payment of (indicate percentage) of the cost as implementation charges as mentioned in para (8) above.

13) The land where the toilet complex is to be constructed will be handed over to the Second Party by the First Party free of all disputes. In case any dispute regarding its title, ownership arise, the First Party will be fully responsible for it. Dismantling of existing structure if any and shifting of underground cables, pipe lines, sewers, etc. if obstructing the construction of the complex will be the responsibility of the First Party.

14) The First Party shall pay 20% of the total estimated cost of the project as advance after signing the Memorandum of Understanding. The balance to be paid stage wise is as follows:

15) **MODE OF PAYMENT:**

First Party agrees for paying the running bills as per following stages:

Running payments shall be made based on stage-wise (four stages to be identified clearly) progress of the work within 15 days from the date of receipt of the running bills and twenty percent advance shall be recovered from the four running bills on a pro-rata basis. Five percent of the running bill amount will be deducted from each remaining bill. This will be released at the time of final payment.

The final payment will be made by the First Party to
the Second Party within 30 days of the commissioning of the complex.

If advance payment and payments on running bills are not made in time as mentioned above, the second party will have the option to stop the work. The First Party in such a case will have to pay compensation to the Second Party for idle labour and establishment cost etc. maintained by the Second Party.

16) If the Second Party fails to complete the work described in para (1) above, the First Party shall have the right to recover the balance amount of advance, i.e. the amount arrived at after deducting the value of work done with 20% management charges from the amount advanced by the First Party to the Second Party under this agreement.

17) It is hereby further agreed that in case, the work could not be completed within the time specified in para (11) above, due to natural calamity, litigation or any other cause beyond the control of the Second Party, then time of completion of work shall be extended by the First Party on mutual consultation.

18) The First Party shall extend all necessary cooperation, assistance and facilities to the Second Party in the construction, completion of work, operation and maintenance of toilet complex specified in this agreement.

19) All rights, title of interest or ownership with regard to the toilet complex constructed by the Second Party shall vest in the First Party except that the toilet complex after the construction, will be handed over to the Second Party for operation and maintenance as agreed to in this Agreement.

20) The Second Party will motivate and educate people, through publicity and promotional activities, for using the toilet complexes constructed, operated and maintained under this agreement.

21) The Second Party shall regularly clean, maintain and repair, if necessary the aforesaid toilet complex for a period of 15 years from the date of commissioning of complex at its own cost and through its own establishment. Subject to the satisfaction of the First Party, this period can be extended for another 15 years on mutually agreed terms. The Second Party shall maintain the standard of sanitation and use necessary disinfectants at its own cost.

22) The Second Party shall provide plants, trees as per space available and maintain them for aesthetic beauty.

23) The First Party shall make available adequate quantity of water at suitable pressure and for the purpose of construction light connection will be provided by the First Party. After commissioning of the toilet block, First Party shall make available adequate quantity of water at suitable pressure. Water and Electricity will be provided by the First Party at their own cost for construction and maintenance of the complex.

(a) The Second Party shall be fully responsible to keep the whole arrangement of the sanitary block for 24 hours service.

(b) The Second Party shall provide a complaint book at the Care-taker room to be filled in case of complaints by the users.

24) The Second Party shall be entitled to impose and charge such reasonable sum as may be necessary from the users of the said toilet complex, after obtaining prior approval of the First Party for meeting the operation, maintenance, repair and establishment costs of the said complex. The Charge to be recovered from the users shall be as follows:

(i) Gents shall have to pay Rs ....... and ladies Rs .......per use. Children below 10 years and physically handicapped persons will not be charged. In case of monthly family pass the fee shall be Rs. ......... per month/family. No charge to be paid for use of urinal. The above charges will be increased by (indicate percentage) at the end of every 3 years.

(ii) Each user will be supplied a tea-spoonful soap powder without any additional charge by the Second Party for washing hands after defecation.

25) The First Party shall allow the Second Party to display signboards on each toilet complex indicating rules and regulations to educate the users. The First Party shall also allow the Second Party to put up their sign board at the toilet complex. The text for display shall be approved by the First Party.

26) It is hereby agreed that any neglect or lapse on the part of the Second Party to clean, maintain and repair regularly the said complex shall entitle the First Party to terminate this agreement, after giving reasonable opportunity to the Second Party by a show cause notice to make necessary amends as per Terms and Conditions of this agreement to the satisfaction of the First Party.

27) The First Party shall have the right to inspect the said toilet complex during construction, operation
and maintenance period and may issue such orders and directions as may be considered necessary in conformity with this agreement to the Second Party. The Second Party shall ensure that such orders are complied with.

28) The Second Party shall not at any time transfer or sublet the rights given under this agreement to the Second Party to any other Party or parties without written permission of the First Party.

29) If any time after the commencement of the work, the First Party for any reason whatsoever decides not to carry out the whole of the said work, the First Party shall give to the Second Party at least two months notice in writing of the fact, and the Second Party shall have no claim to any payment of compensation whatsoever on account of any profit or advantage which the Second Party might have derived of by the First Party by not getting whole of the work done. However, full payment including management charges will be made by the First Party to the Second Party for all the constructions done and materials procured by the Second Party.

30) The First Party shall provide protection to the Second Party in the event of any threat arising out of illegal activities of persons of vested interests.

31) For de-sludging the soakage pits and septic tanks, the tanker with de-sludging pumping plants will be made available by the First Party to the Second Party, whenever need arises, free of charge. All operation charges of the equipment for de-sludging and discharging the sludge and sewerage at the appropriate place will be borne by the First Party.

32) Any matter not covered by this agreement will be mutually settled by the Parties to this agreement.

33) In case any dispute, difference or question between the two parties arising out of this agreement remain unsettled, the matter shall be referred to a mutually agreed arbitrator, whose decision shall be final and binding on both the Parties.

34) All type of repairing works required to be done during first 3 years shall be borne by the Second Party.

In witness whereof both the Parties here to have signed this agreement deed on this ______ day of ________, ____________ (enter date, month and year) in the presence of witnesses:

<table>
<thead>
<tr>
<th>Signature of the parties</th>
<th>Signature of the Witness</th>
</tr>
</thead>
</table>

NOTES (Not part of the agreement format):

i. The underlined text brackets need to be replaced by suitable matter as indicated in the bracket.

ii. The mode of payment given in para 15 is indicative and can be modified to suit local situation.

iii. In case water supply and electric supply are not provided by the local body/utility organization, para 23 needs to be suitably amended.

iv. In para 24, admissible user charges needs to be filled in.

v. In case the local body cannot provide tanker for de-sludging of septic tank, para 31 needs to be modified.

vi. If the First Party is satisfied that the O&M charges can not be met fully from the user charges and other incomes, the First Party can agree to pay a monthly amount to the Second Party to meet the short fall. This needs to be included in the agreement.

vii. The spaces shown as .......... in the format need to be filled in suitably.

viii. The signatory on behalf of the second party should be an authorized person. Local bodies/utility organizations should insist on the production of a valid power of attorney in the name of the signatory prior to entering in to an agreement.
PEOPLE’S PARTICIPATION IN IMPROVING SANITATION – A CASE OF KANPUR SLUMS

CONTEXT
1. Kanpur, the industrial city of Uttar Pradesh (UP) State is situated on the banks of the river Ganges. Several decades ago, an extensive railway network was laid to facilitate movement of raw materials and manufactured goods between several textile mills. A large number of poor migrant workers settled along the railway tracks and in vacant lands around the industries. Most of these settlements are currently regarded as unauthorized and are denied basic civic amenities. Today, it is estimated that about 700,000 people (over 20 percent of Kanpur’s population) live in 300 to 350 slums with little or no access to civic services. In the midst of such a dismal scene, the Kanpur Slum Dwellers Federation (KSDF) a community based organisation (CBO) has started mobilizing the community to solve its own problems. During the last two years about 5,000 people living in seven slums, started making efforts to build and operate community toilets.

OBJECTIVE
2. The overall objective of KSDF is to improve the quality of life for poor people living in the slums of Kanpur. This case study focuses on one of KSDF’s immediate objectives which is to promote people’s participation in construction, operation, and maintenance of community toilets in Kanpur slums.

ACTIVITIES AND ACHIEVEMENTS
KSDF as an intermediating CBO
3. KSDF provides a platform through which Kanpur slum dwellers can reveal their demand for improved civic services and facilitates community mobilization in enforcing shared commitments and accountability among individuals. It all started with several visits by a few Kanpur slum leaders and a highly motivated social worker, Mr. S. Tiwari, to Bombay to learn about the activities of the National Slum Dwellers Federation (NSDF)¹, Mahila Milan² (another community based group), and an NGO the Society for the Promotion of Area Resource Centers (SPARC)³. NSDF, Mahila Milan, and SPARC work together as a single force. Once convinced of the need for a forum, these leaders formed KSDF in 1992 and began their first task of enumerating slums of Kanpur city. They collected basic information such as the number of families, land ownership, and access to safe water, sanitation, and health and education services. KSDF is now active in thirty slums either directly or indirectly through government programs such as Urban Basic Services Program⁴ (UBSP) as well as small groups engaged in improving the living conditions of slum dwellers.

Work in select slums
4. KSDF has ten full time staff, mostly field workers from communities where KSDF is active and a couple of dedicated social workers. Presently, KSDF’s monthly expenses, averaging Rs. 25,000, are reimbursed by NSDF, and KSDF hopes that this arrangement will continue in future.

5. KSDF decided to focus its activities on settlements along the railway tracks. The people are very poor, do not have access to basic civic services, and the settlements are not recognized by Kanpur Nagar Maha Palika (KNMP)⁵, due to land tenure problem (the land officially belongs to Railways). KSDF has slowly gained acceptance among slum dwellers by providing assistance in obtaining

¹ NSDF is a Bombay based loose network of several city level slum dwellers federations.
² Mahila Milan, sister organisation of NSDF, is an association formed by women living on pavements and slums to bring economic equality for women and empower them to take community leadership.
³ SPARC is a Bombay based NGO started in 1984 by some social workers and professionals to help urban poor to organize themselves and provide a space (emotional and social) to pool their human resources and learn from each other. Area resource center is the term coined to describe such a ‘space’. SPARC provides professional support to NSDF and Mahila Milan and they work together as a single force.
⁴ UBSP is one of the Urban Poverty Alleviation programs of the Ministry of Urban Development, Government of India. The focus is to organize communities by creating participatory community based structures and provide them an opportunity to formulate their own micro development plans.
⁵ Kanpur Municipal Corporation is known as Kanpur Nagar Maha Palika.
ration cards for every household and through its Mahila Milan crisis credit scheme.

**Demand revelation**

6. KSDF mobilizes the community by organizing study visits for select slum leaders to other slums within and outside Kanpur, followed by small group meetings within each slum to assess the needs of its dwellers. Three basic needs, toilets, electricity, and drinking water emerged in almost all the slums. Contrary to the "normal" belief, people prioritized toilets over drinking water because a few programs exist to install free handpumps in slums. The residents access the program through local politicians or a municipal corporator. The handpumps are normally maintained by community; repair costs are shared by users, and the majority of pumps remain in operation. The absence of free toilet programs, however, and the ever decreasing space for open defecation results in a lack of privacy, particularly for women. This accounts for people's priority for toilets.

7. Once slum leaders show keen interest in solving their problems, KSDF conducts door-to-door surveys to collect detailed information, such as size of the families, income levels, sanitation and water supply service levels, etc. The findings of these surveys are then discussed in community meetings. This information sharing triggers a debate within the community(ies) on their problems, possible solutions, and strategies for solving problems. In small group meetings, community toilets usually emerged as the favored option because: (i) majority of dwellers are very poor; and (ii) settlements are in the middle of densely populated areas and not much land is available for individual toilets.

**Community mobilization for construction, operation, and maintenance of community toilets**

8. KSDF, assisted by NSDF and SPARC, plays a facilitating role in community mobilization for construction, operation and maintenance of community toilets. As women are the most affected, due to ever shrinking space for open defecation, Mahila Milan leaders played an important role in mobilizing the community. The following paragraphs describe the process followed in one of the cases.

9. **Construction:** In early 1993, Sangam Theater Railway Line settlement dwellers (about 150 families) decided to construct a ten-seat community toilet. NSDF organized a visit by some leaders/dwellers to Bombay and trained them in construction, operation, and maintenance of toilets. A toilet committee, consisting of slum leaders and a representative of KSDF persuaded KNMP for permission to construct the toilet in the nearby municipal land. The community decided to collect Rs. 50 per family (based on their affordability and willingness to pay) toward the construction cost. As only Rs. 4,500 (about 10 percent of the total cost) could be collected, NSDF contributed the rest. To keep costs to a minimum, the community decided not to employ a contractor but to build the structure themselves. While no rigid rules for community participation were framed (except that only masons from the same community will be employed), many people provided free labor. The total construction cost was only around Rs. 50,000, as compared to Rs. 86,000 when built by KNMP. This represented an investment saving of 40 percent, of which the major savings are due to absence of profit and overhead costs of a contractor/formal institution and some amount of free labor from the community. The toilet was formally inaugurated on 15 August 1993.

10. **Operation and Maintenance:** The community decided to operate and maintain the toilet on a 'pay-and-use' basis. It employed two persons (one part-time caretaker and one "safaiwala" - a cleaner) from the community. The part-time caretaker is a community member who runs a cigarette shop next to toilet. His job is to collect money from outsiders and residents, supervise the cleaner's work, and maintain accounts. The safiwala cleans the toilet twice a day. Initially user charges were Rs. 10 per month (p.m) per family and Re. 1 per use for outsiders. About 5 percent of families are very poor, and they are allowed to pay whenever and whatever they can afford. The poorest of poor therefore gain access to service. However, as the toilet is located close to a commercial area, income from outsiders' use turned out to be significant (about Rs. 1,800 p.m compared to Rs. 500 p.m from residents). Total monthly income was more than double the expenditure (Rs. 200 p.m paid to the caretaker; Rs. 500 p.m for safaiwala; and Rs. 300 p.m on an average for maintenance), and as a result, the community decided to reduce the monthly charge for residents to Rs. 5 p.m. Even after 50 percent reduction in charges, the community was able to earn about Rs. 10,000 during one year. Now the community plans to use the monthly savings, deposited in a Bank, to replace the existing asbestos roof with a concrete roof and construct a community center. Note: Sangam theater is a special case where the toilet attracts large number of outsiders. KSDF and other slum communities (Shiv Hatra and Burma Shell) where

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A ration card entitles the family to receive prescribed quota of food and fuel at subsidized price from the Government designated shops. Additionally, ration card is used as an official identity card for legal purposes like obtaining loans etc.
toilets are under construction are aware of this fact and therefore will be charging Rs. 10 p.m per family.

Demand from other settlements and KNMP's response

11. Considering the success of KSDF’s Sangam experiment and demand from other poor settlements, KNMP decided to support KSDF’s initiatives by (i) allotting municipal land for construction of seven ten-seat community toilets; (ii) subsidizing the construction costs, by reimbursing 50 percent of the cost subject to a maximum of Rs. 25,000 per toilet (KNMP changed its earlier position not to extend financial assistance to KSDF as they are not a registered society); and (iii) agreeing to provide water and sewer connections to all future toilet constructions by charging a one-time fee of Rs. 6,000 per toilet. KSDF has started working in all the seven settlements. While construction is almost complete in two settlements (Shiv Hatra and Burma Shell), community mobilization is taking place in other five settlements. In all these cases, communities are willing to fully bear operation and maintenance costs but not capital costs. They are willing to pay only 10 percent of toilet construction costs (Rs. 50 per family) and the rest 90 percent comes as subsidy from KNMP (50 percent) and NSDF (40 percent).

PROBLEMS ENCOUNTERED

Cost sharing and agency problems

12. Parallel, free government programs, like UBSP or the Ganga Action Plan, in other slums create a negative influence against mobilizing the communities to pay for construction costs. Recent closure of several textile mills rendered many slum dwellers jobless. The incomes of several families have come down significantly, and some families have migrated to other towns. Most people are not willing to contribute more than Rs. 50 per family. On an average, with 100 families paying for a ten-seat toilet, people’s contribution comes to about 10 percent of construction costs.

13. Political interference local political leaders feel threatened by community self-help initiatives, as they are afraid that their support base will be eroded. To gain political benefits, they influence the community not to pay for these services by (i) spreading the message that it is government’s responsibility to provide free services to poor, and (ii) channeling services to influential sections of the community. Should formal institutions be more transparent about their policies and actions in providing services to poor?

14. In the absence of adequate funds, KSDF is unable to expand its activities. How long can KSDF’s initiatives be sustained with its dependence on NSDF for funds? Can NSDF continue to provide financial support forever?

15. KNMP’s contribution (50 percent subsidy) toward capital (construction) costs comes as reimbursement of expenses incurred by KSDF to a maximum of Rs. 25,000 per toilet. As a result, KSDF fully depends on NSDF for toilet construction funds. How can this be sustained in the long run? One possible approach could be to set up a revolving fund for community toilet construction, to be managed by KSDF. This fund could then be used to extend loans to cover the 40 percent subsidy from NSDF (which could be recovered as part of monthly household contributions) to communities wanting to have toilets. Will KNMP or the government of UP or NSDF be interested in setting up such a fund? Will the community be willing to pay 50 percent of construction costs? What are their incentives?

16. KSDF is active in other areas of development also. How much of their resources are now spent for mobilizing the community for construction, operation and maintenance of toilets? When we add these transaction costs, will construction costs still be lower than KNMP's costs?

Lessons

17. Poor are willing to pay for improved services. ‘Pay-and-use’ community toilets are financially viable in slums, when there is a demand and community members participate in construction, operation and maintenance.

18. Partnership initiatives of formal and informal institutions can provide gainful services to poor.

19. The following are some distinct advantages of a community-managed construction, operation and maintenance approach over a government/contractor-based approach:

i) Construction, operation and maintenance costs are significantly lower when the community assumes the total responsibility. The additional transaction costs incurred by a NGO or CBO in mobilizing the community, improves the chances of sustainability;

ii) Community-managed services operate with flexible rules and regulations, and, as a result, even the poorest of poor gain access to service; and

iii) Operation of ‘Pay-and-use’ toilets managed by community could become a source of income, particularly if it happens to attract outsiders, for community welfare activities.
# A Typical Bill of Quantities for a 11-Seat Community Toilet Block

(Drawing No. 1)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Item</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Earthwork in excavation including disposal of excavated earth lead up to 50m and lift up to 1.5m; disposed earth to be levelled and neatly dressed.</td>
<td>54.35 cum</td>
</tr>
<tr>
<td>2.</td>
<td>Filling the available excavated earth in sides of the foundation trenches and the plinth.</td>
<td>36.46 cum</td>
</tr>
<tr>
<td>3.</td>
<td>Filling in the plinth with fine sand under the floor.</td>
<td>6.52 cum</td>
</tr>
<tr>
<td>4.</td>
<td>Carriage of surplus earth and its disposal at a proper place.</td>
<td>17.89 cum</td>
</tr>
<tr>
<td>5.</td>
<td>Providing and laying cement concrete 1:5:10.</td>
<td>17.65 cum</td>
</tr>
<tr>
<td>6.</td>
<td>Providing and laying 40 mm thick DPC with cement concrete 1:2:4.</td>
<td>18.54 sqm</td>
</tr>
<tr>
<td>7.</td>
<td>Applying a coat of residual petroleum bitumen on DPC.</td>
<td>18.54 sqm</td>
</tr>
<tr>
<td>8.</td>
<td>Reinforced cement concrete 1:1.5:3 excluding centering, shuttering and reinforcement in:</td>
<td></td>
</tr>
<tr>
<td>8. i)</td>
<td>Rafts &amp; footings</td>
<td>0.79 cum</td>
</tr>
<tr>
<td>8. ii)</td>
<td>Walls</td>
<td>3.74 cum</td>
</tr>
<tr>
<td>8. iii)</td>
<td>Slabs</td>
<td>1.20 cum</td>
</tr>
<tr>
<td>9.</td>
<td>Reinforced cement concrete 1:2:4 excluding centering, shuttering and reinforcement in:</td>
<td></td>
</tr>
<tr>
<td>9. i)</td>
<td>Lintels and beams</td>
<td>0.279 cum</td>
</tr>
<tr>
<td>9. ii)</td>
<td>Slabs</td>
<td>12.304 cum</td>
</tr>
<tr>
<td>9. iii)</td>
<td>Walls</td>
<td>0.033 cum</td>
</tr>
<tr>
<td>10.</td>
<td>Pre-cast reinforced cement concrete 1:2:4 excluding centering, shuttering and reinforcement.</td>
<td>0.074 cum</td>
</tr>
<tr>
<td>11.</td>
<td>Centering and shuttering including removal of the form work for:</td>
<td></td>
</tr>
<tr>
<td>11. i)</td>
<td>Slabs</td>
<td>93.91 sqm</td>
</tr>
<tr>
<td>11. ii)</td>
<td>Lintels, beams and cantilevers</td>
<td>4.60 sqm</td>
</tr>
<tr>
<td>11. iii)</td>
<td>Walls</td>
<td>70.22 sqm</td>
</tr>
<tr>
<td>12.</td>
<td>Reinforcement for RCC work including bending, binding and placing in position</td>
<td>1446 kg</td>
</tr>
</tbody>
</table>

Annex 16
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Item</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Brick work with bricks of class designation 75 the in foundation and the plinth in cement mortar 1:6</td>
<td>33.76 cum</td>
</tr>
<tr>
<td>14</td>
<td>Brick work with bricks of class designation 75 in the superstructure in cement mortar 1:6</td>
<td>43.27 cum</td>
</tr>
<tr>
<td>15</td>
<td>Provide and lay 40 mm thick marble chips flooring with under layer of 31 mm thick cement concrete 1:2:4</td>
<td>69.62 sqm</td>
</tr>
<tr>
<td>16</td>
<td>Provide and lay 18 mm thick marble chips dado in the toilets and baths and skirting at other places where marble chip flooring is provided.</td>
<td>97.70 sqm</td>
</tr>
<tr>
<td>17</td>
<td>40 mm thick cement concrete flooring 1:2:4 finished with a floating coat of neat cement</td>
<td>4.05 sqm</td>
</tr>
<tr>
<td>18</td>
<td>Cement plaster skirting 18 mm thick with cement mortar 1:3 finished with a floating coat of neat cement</td>
<td>1.19 sqm</td>
</tr>
<tr>
<td>19</td>
<td>Painting the roof top with bitumen</td>
<td>54.32 sqm</td>
</tr>
<tr>
<td>20</td>
<td>Provide and lay 10 cm thick mud phaska</td>
<td>18.61 sqm</td>
</tr>
<tr>
<td>21</td>
<td>Provide and fix 30 mm thick kail or locally available wood batten door shutters</td>
<td>14.72 sqm</td>
</tr>
<tr>
<td>22</td>
<td>Provide and fix 40 mm thick kail or locally available wood panelled door shutters</td>
<td>1.76 sqm</td>
</tr>
<tr>
<td>23</td>
<td>Provide and fix M.S sliding door bolts</td>
<td>28 Nos.</td>
</tr>
<tr>
<td>24</td>
<td>Provide and fix oxidized M.S. handles</td>
<td>28 Nos.</td>
</tr>
<tr>
<td>25</td>
<td>Provide and fix steel glazed windows including glass panes and a coat of steel primer</td>
<td>3.59 sqm</td>
</tr>
<tr>
<td>26</td>
<td>Provide and fix mild steel T. iron frames for doors and windows including a coat of steel primer</td>
<td>31.78 kg</td>
</tr>
<tr>
<td>27</td>
<td>Provide and lay white glazed tiles in skirting on 12 mm thick cement plaster 1:3 and jointed with white cement slurry</td>
<td>5.28 sqm</td>
</tr>
<tr>
<td>28</td>
<td>12 mm cement plaster 1:6</td>
<td>252.76 sqm</td>
</tr>
<tr>
<td>29</td>
<td>15 mm cement plaster 1:6</td>
<td>139.29 sqm</td>
</tr>
<tr>
<td>30</td>
<td>6 mm cement plaster 1:3 finished with a floating coat of neat cement on the top of the wall for bearing RCC slabs and beams.</td>
<td>19.33 sqm</td>
</tr>
<tr>
<td>31</td>
<td>6 mm cement plaster 1:3 on the ceiling and the water tank of walls</td>
<td>132.39 sqm</td>
</tr>
<tr>
<td>32</td>
<td>Colour washing with a base coat of white washing</td>
<td>171.05 sqm</td>
</tr>
<tr>
<td>33</td>
<td>White washing</td>
<td>297.67 sqm</td>
</tr>
<tr>
<td>34</td>
<td>Applying priming coat on wood-work</td>
<td>42.82 sqm</td>
</tr>
<tr>
<td>S. No.</td>
<td>Item</td>
<td>Qty.</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>35.</td>
<td>Painting with the ready mixed paint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i) Steel work</td>
<td>12.41 sqm</td>
</tr>
<tr>
<td></td>
<td>ii) Wood work</td>
<td>42.82 sqm</td>
</tr>
<tr>
<td>36.</td>
<td>Provide and fix ceramic squatting pans as per the PF toilet design</td>
<td>11 Nos.</td>
</tr>
<tr>
<td>37.</td>
<td>Provide and fix ceramic foot-rests</td>
<td>14 pairs</td>
</tr>
<tr>
<td>38.</td>
<td>Provide and fix ceramic trap of 20 mm water-seal</td>
<td>11 Nos.</td>
</tr>
<tr>
<td>39.</td>
<td>Constructing a 25 cm wide brick drain in cement mortar 1:6 including earth excavation, 10 cm thick bed concrete 1:5:10 and 25 mm thick cement concrete 1:2:4 for filling haunches, 12 mm cement plaster 1:4 with a floating coat of neat cement inside the drain (average depth 30 cm)</td>
<td>23.22 m</td>
</tr>
<tr>
<td>40.</td>
<td>Provide, lay and joint glazed stoneware pipe 100 mm dia</td>
<td>16.20 m</td>
</tr>
<tr>
<td>41.</td>
<td>Provide and fix M.S. grill</td>
<td>50.26 kg</td>
</tr>
<tr>
<td>42.</td>
<td>Provide and fix 50 mm thick pre-cast cement concrete jali 1:2:4</td>
<td>6.84 sqm</td>
</tr>
<tr>
<td>43.</td>
<td>Provide and fix fan clamp of 16 mm dia M.S. bars</td>
<td>2 Nos.</td>
</tr>
<tr>
<td>44.</td>
<td>Provide and fix 100 mm dia A.C. rain water pipe with M.S. clamps including all necessary accessories</td>
<td>7.10 m</td>
</tr>
<tr>
<td>45.</td>
<td>Provide and fix 40mm wide and 6 mm thick glass strips in joints of floor</td>
<td>36.15 m</td>
</tr>
<tr>
<td>46.</td>
<td>Provide and fix M.S. pintels</td>
<td>24 Nos.</td>
</tr>
<tr>
<td>47.</td>
<td>Supply and fix rolling shutters made of 80 x 1.25 mm M.S. laths</td>
<td>4.41 sqm</td>
</tr>
<tr>
<td>48.</td>
<td>Provide and install pumping plant of 0.5 H.P.</td>
<td>2 sets</td>
</tr>
<tr>
<td>49.</td>
<td>Provide all materials and construct a covered brick drain 200 mm wide for the sewage.</td>
<td>23 m</td>
</tr>
<tr>
<td>50.</td>
<td>Provide all materials and construct the brick chamber</td>
<td>2 Nos.</td>
</tr>
<tr>
<td>51.</td>
<td>Provide and fix C.I. foot steps in water reservoirs</td>
<td>5 Nos.</td>
</tr>
<tr>
<td>52.</td>
<td>Provide and fix C.I. manhole cover (light duty) with frame 600 mm dia</td>
<td>2 Nos.</td>
</tr>
<tr>
<td>53.</td>
<td>Provision of the water supply installation</td>
<td>job</td>
</tr>
<tr>
<td>54.</td>
<td>Provision of the electric supply installation</td>
<td>job</td>
</tr>
<tr>
<td>55.</td>
<td>Provision for the development of site and plantation of trees and shrubs</td>
<td>job</td>
</tr>
</tbody>
</table>
## A TYPICAL BILL OF QUANTITIES FOR A COVERED BRICK DRAIN
### (10 METERS LENGTH)
#### (Drawing No. 3)

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwork in excavation including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m; disposed earth to be levelled and neatly dressed</td>
<td>1.68 cum</td>
</tr>
<tr>
<td>Provide and lay cement concrete 1:5:10</td>
<td>0.48 cum</td>
</tr>
<tr>
<td>Provide and lay cement concrete 1:3:6</td>
<td>0.04 cum</td>
</tr>
<tr>
<td>Brickwork with bricks of class designation 75 in the foundation and the plinth in cement mortar 1:6</td>
<td>0.46 cum</td>
</tr>
<tr>
<td>12 mm cement plaster 1:4 finished with cement punning in the semicircular portion</td>
<td>3.14 sqm</td>
</tr>
<tr>
<td>Reinforced cement concrete 1:2:4 excluding of centering, shuttering and reinforcement</td>
<td>0.22 cum</td>
</tr>
<tr>
<td>Reinforcement for RCC work including bending, binding and placing in position</td>
<td>17.27 kg</td>
</tr>
<tr>
<td>Centering and shuttering including removal of the form work</td>
<td>5.73 sqm</td>
</tr>
</tbody>
</table>
# A Typical Bill of Quantities for a Septic Tank

(Drawing No. 5)

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Earthwork in excavation including disposal of excavated earth, lead up to 50 m; disposed earth to be levelled and neatly dressed</td>
</tr>
<tr>
<td></td>
<td>(i) Up to 1.5 m below ground level 163.67 cum</td>
</tr>
<tr>
<td></td>
<td>(ii) 1.5 to 3.0 m below ground level 92.04 cum</td>
</tr>
<tr>
<td></td>
<td>(iii) 3.0 m to 4.5m below ground level 0.74 cum</td>
</tr>
<tr>
<td>2.</td>
<td>Filling available excavated earth in sides of the foundation trenches and the plinth 18.50 cum</td>
</tr>
<tr>
<td>3.</td>
<td>Carriage of surplus earth and its disposal at a proper place 237.95 cum</td>
</tr>
<tr>
<td>4.</td>
<td>Provide and lay cement concrete 1:5:10 17.02 cum</td>
</tr>
<tr>
<td>5.</td>
<td>Provide and lay cement concrete 1:2:4 0.15 cum</td>
</tr>
<tr>
<td>6.</td>
<td>Brick work with bricks of class designation 75 in the foundation and the plinth in cement mortar 1:3 0.31 cum</td>
</tr>
<tr>
<td>7.</td>
<td>12 mm cement plaster of mix 1:3 finished with cement punning 0.80 sqm</td>
</tr>
<tr>
<td>8.</td>
<td>6 mm cement plaster 1:3 finished with a floating coat of neat cement on top of the wall for bearing of the RCC slab. 0.73 sqm</td>
</tr>
<tr>
<td>9.</td>
<td>6 mm cement plaster 1:3 on ceiling and inner faces of RCC walls 282.29 sqm</td>
</tr>
<tr>
<td>10.</td>
<td>Reinforced cement concrete 1:1.5:3 excluding centering, shuttering and reinforcement in:</td>
</tr>
<tr>
<td></td>
<td>(i) Rafts and footings 18.11 cum</td>
</tr>
<tr>
<td></td>
<td>(ii) Walls 21.23 cum</td>
</tr>
<tr>
<td>11.</td>
<td>Reinforced cement concrete 1:2:4 excluding centering, shuttering and reinforcement in slabs and the beams 16.02 cum</td>
</tr>
<tr>
<td>12.</td>
<td>Pre-cast reinforced cement concrete 1:2:4 excluding centering, shuttering and reinforcement in the slab 0.09 cum</td>
</tr>
<tr>
<td>13.</td>
<td>Reinforcement for RCC including bending, binding and placing in position 4353.00 kg</td>
</tr>
<tr>
<td>Item</td>
<td>Qty.</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>14. Centering and shuttering including removal of the form work for:</td>
<td></td>
</tr>
<tr>
<td>(i) Walls</td>
<td>282.61 sqm</td>
</tr>
<tr>
<td>(ii) Suspended floors and roofs</td>
<td>94.91 sqm</td>
</tr>
<tr>
<td>15. Provide and fix C.I foot steps</td>
<td>16 Nos.</td>
</tr>
<tr>
<td>16. Provide and fix 150 mm dia C.I. bend</td>
<td>2 Nos.</td>
</tr>
<tr>
<td>17. Provide and fix C.I. manhole cover (medium duty) with a frame 600 mm dia</td>
<td>4 Nos.</td>
</tr>
<tr>
<td>18. Provide and fix 100 mm dia C.I. ventilating pipe</td>
<td>7.2 m</td>
</tr>
<tr>
<td>19. Provide and fix of 100 mm dia C.I. cowl</td>
<td>4 Nos.</td>
</tr>
<tr>
<td>20. Provide and fix C. I. penstock</td>
<td>2 Nos.</td>
</tr>
</tbody>
</table>
A TYPICAL BILL OF QUANTITIES FOR
A SOAKAGE PIT

(Drawing No. 6)

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Earthwork in excavation including disposal of excavated earth,</td>
<td></td>
</tr>
<tr>
<td>lead up to 50 m; disposed earth to be levelled and neatly dressed</td>
<td></td>
</tr>
<tr>
<td>(i) Up to 1.5 m below ground level</td>
<td>11.32 cum</td>
</tr>
<tr>
<td>(ii) 1.5 to 3.0 m below ground level</td>
<td>9.65 cum</td>
</tr>
<tr>
<td>2. Filling the excavated earth in the sides of the foundation</td>
<td>0.41 cum</td>
</tr>
<tr>
<td>trenches and the plinth</td>
<td></td>
</tr>
<tr>
<td>3. Supply and provide envelope with coarse aggregate all around the</td>
<td>1.78 cum</td>
</tr>
<tr>
<td>pit</td>
<td></td>
</tr>
<tr>
<td>4. Carriage of surplus earth and its disposal at a proper place</td>
<td>20.56 cum</td>
</tr>
<tr>
<td>5. Brick work with bricks of class designation 75 in the foundation</td>
<td>5.61 cum</td>
</tr>
<tr>
<td>and the plinth in cement mortar 1:6</td>
<td></td>
</tr>
<tr>
<td>6. 12 mm cement plaster 1:6</td>
<td>3.53 sqm</td>
</tr>
<tr>
<td>7. 6 mm cement plaster 1:6 finished with a floating coat of neat</td>
<td>1.93 sqm</td>
</tr>
<tr>
<td>cement on the top of the wall for bearing the RCC slab.</td>
<td></td>
</tr>
<tr>
<td>8. Reinforced cement concrete 1:2:4 excluding centering, shuttering</td>
<td></td>
</tr>
<tr>
<td>and reinforcement.</td>
<td></td>
</tr>
<tr>
<td>(i) Cast in situ</td>
<td>0.655 cum</td>
</tr>
<tr>
<td>(ii) Pre-cast</td>
<td>0.027 cum</td>
</tr>
<tr>
<td>9. Reinforcement for RCC including bending, binding and placing in</td>
<td>53.54 kg</td>
</tr>
<tr>
<td>position</td>
<td></td>
</tr>
<tr>
<td>10. Centering and shuttering including removal of the form work for:</td>
<td></td>
</tr>
<tr>
<td>(i) Suspended floors, roofs and slabs</td>
<td>4.91 sqm</td>
</tr>
<tr>
<td>(ii) Circular work.</td>
<td>1.26 sqm</td>
</tr>
</tbody>
</table>
# A Typical Bill of Quantities for a Chamber

(Drawing No. 11)

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Earthwork in excavation including disposal of the excavated earth, lead up to 50 m and lift up to 1.5 m; disposed earth to be levelled and neatly dressed</td>
<td>0.57 cum</td>
</tr>
<tr>
<td>2. Providing and laying cement concrete 1:5:10</td>
<td>0.18 cum</td>
</tr>
<tr>
<td>3. Providing and laying cement concrete 1:2:4 in drain and benching including rendering the surface smooth with cement</td>
<td>0.02 cum</td>
</tr>
<tr>
<td>4. Brick work with bricks of class designation 75 in foundation and plinth in cement mortar 1:6</td>
<td>0.26 cum</td>
</tr>
<tr>
<td>5. 12 mm cement plaster 1:4</td>
<td>0.43 sqm</td>
</tr>
<tr>
<td>6. Reinforced cement concrete 1:2:4 excluding centring, shuttering and reinforcement</td>
<td>0.056 cum</td>
</tr>
<tr>
<td>7. Reinforcement for RCC including bending, binding and placing in position</td>
<td>4.40 kg</td>
</tr>
<tr>
<td>8. Centering and shuttering including removal of form work</td>
<td>1.16 sqm</td>
</tr>
</tbody>
</table>
## A FORMAT FOR ASSESSING ANNUAL O&M COSTS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Description</th>
<th>Cost Month(Rs.)</th>
<th>Cost/ Annum(Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Staff Salary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Attendants (Nos. X Salary/month)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Caretakers (Nos. X Salary/month)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Cleaning materials, tools, equipment and soap powder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Water supply and electricity charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Day-to-day repairs and replacements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Septic Tank cleaning once a year @ Rs. per cleaning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Annual repairs (% of the building cost)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Administrative and Supervision charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>...% of the total cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Not applicable if monthly passes are issued to all users

** Not applicable if waste water is let into sewers

† This could be low during the first two years. Thereafter the annual repair costs may be in the range of 2.5% to 3% of the capital cost of toilet block.
A FORMAT FOR A MONTHLY PASS
(ON FRONT PAGE)

MONTHLY PASS

1. House No.

2. Name of head of household

3. Address

4. Number of persons in the household

5. Charges per month

6. Date of Issue

Name of person with designation issuing the card

Signature of the person issuing the card
(ON BACK PAGE)

Issuing Authority: ____________________  Year ______

<table>
<thead>
<tr>
<th>Month</th>
<th>Amount received</th>
<th>Payment received on</th>
<th>Date</th>
<th>Name of the Receiver</th>
<th>Signature of the Receiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
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<td>March</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>April</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>June</td>
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<tr>
<td>July</td>
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</tr>
<tr>
<td>August</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>October</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>December</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DRAWINGS
# List of Drawings*

<table>
<thead>
<tr>
<th>Drg. No.</th>
<th>Sheet No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1/3</td>
<td>11-Seat Community Toilet with Bathing, Washing and Urinal Facilities - Front &amp; Side Elevations</td>
</tr>
<tr>
<td>1.</td>
<td>2/3</td>
<td>11-Seat Community Toilet with Bathing, Washing and Urinal Facilities - Ground Floor Plan</td>
</tr>
<tr>
<td>1.</td>
<td>3/3</td>
<td>11-Seat Community Toilet with Bathing, Washing and Urinal Facilities - Sectional Details including Foundation Details</td>
</tr>
<tr>
<td>2.</td>
<td>1/1</td>
<td>Squatting Pan and Trap for Pour Flush Latrine</td>
</tr>
<tr>
<td>3.</td>
<td>1/1</td>
<td>Details of Urinal</td>
</tr>
<tr>
<td>4.</td>
<td>1/1</td>
<td>Brick Drain for Sewage</td>
</tr>
<tr>
<td>5.</td>
<td>1/1</td>
<td>Chamber</td>
</tr>
<tr>
<td>6.</td>
<td>1/2</td>
<td>Septic Tank (600 Users) - Plan and Section</td>
</tr>
<tr>
<td>6.</td>
<td>2/2</td>
<td>Septic Tank (600 Users) - Details of Inlet Chamber</td>
</tr>
<tr>
<td>7.</td>
<td>1/1</td>
<td>Soakage Pit</td>
</tr>
<tr>
<td>8.</td>
<td>1/1</td>
<td>Conceptual Design of a Two Storey 4-Seat Community Toilet Block with Urinal Facilities - Ground and First Floor Plans</td>
</tr>
<tr>
<td>9.</td>
<td>1/1</td>
<td>Conceptual Design of an Eight Seat Community Toilet Block with Bathing and Urinal Facilities - Front Elevation and Plan</td>
</tr>
<tr>
<td>10.</td>
<td>1/4</td>
<td>Conceptual Design of a Two Storey 11-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - Front Elevation</td>
</tr>
<tr>
<td>10.</td>
<td>2/4</td>
<td>Conceptual Design of a Two Storey 11-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - Ground Floor Plan</td>
</tr>
<tr>
<td>10.</td>
<td>3/4</td>
<td>Conceptual Design of a Two Storey 11-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - First Floor Plan</td>
</tr>
<tr>
<td>10.</td>
<td>4/4</td>
<td>Conceptual Design of a Two Storey 11-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - Terrace Plan</td>
</tr>
<tr>
<td>11.</td>
<td>1/2</td>
<td>Conceptual Floor Plan of a Double Storey 14-Seat Community Toilet with Bathing and Urinal Facilities - Front Elevation</td>
</tr>
<tr>
<td>11.</td>
<td>2/2</td>
<td>Conceptual Floor Plan of a Double Storey 14-Seat Community Toilet with Bathing and Urinal Facilities - Ground and First Floor Plans.</td>
</tr>
<tr>
<td>12.</td>
<td>1/4</td>
<td>Conceptual Design of a Two Storey 22-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - Section and Side Elevation</td>
</tr>
<tr>
<td>Drg. No.</td>
<td>Sheet No</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>12.</td>
<td>2/4</td>
<td>Conceptual Design of a Two Storey 22-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - Ground Floor Plan and Foundation Details</td>
</tr>
<tr>
<td>12.</td>
<td>3/4</td>
<td>Conceptual Design of a Two Storey 22-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - First Floor Plan</td>
</tr>
<tr>
<td>12.</td>
<td>4/4</td>
<td>Conceptual Design of a Two Storey 22-Seat Community Toilet Block with Bathing, Washing and Urinal Facilities - 2nd Floor/Terrace Plan</td>
</tr>
<tr>
<td>13.</td>
<td>1/1</td>
<td>Conceptual Layout of a Community Toilet Block with Septic Tank and Soakage Pit</td>
</tr>
</tbody>
</table>

*Drawings: Courtesy - Sulabh International, New Delhi*
SCHEDULE OF DOORS & WINDOWS

<table>
<thead>
<tr>
<th>Code</th>
<th>Dimensions</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>876 x 1500</td>
<td>Wooden Door</td>
</tr>
<tr>
<td>D1</td>
<td>876 x 1800</td>
<td>Ditto</td>
</tr>
<tr>
<td>D2</td>
<td>900 x 1950</td>
<td>Ditto</td>
</tr>
<tr>
<td>W</td>
<td>750 x 1350</td>
<td>Glazed Window</td>
</tr>
<tr>
<td>W1</td>
<td>1450 x 1350</td>
<td>Ditto</td>
</tr>
<tr>
<td>W2</td>
<td>900 x 1050</td>
<td>Ditto</td>
</tr>
<tr>
<td>R</td>
<td>910 x 2100</td>
<td>Rolling Shutter</td>
</tr>
<tr>
<td>J</td>
<td>600 x 600</td>
<td>Precast Cement Conc. Jali</td>
</tr>
<tr>
<td>J1</td>
<td>900 x 800</td>
<td>Ditto</td>
</tr>
</tbody>
</table>

All dimensions in mm

11 Seat Community Toilet with Bathing, Washing and Urinal Facilities

<table>
<thead>
<tr>
<th>Drawing No.</th>
<th>Sheet No.</th>
<th>Scale</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1/3</td>
<td>1:75</td>
</tr>
</tbody>
</table>
11 SEAT COMMUNITY TOILET WITH BATHING, WASHING AND URINAL FACILITIES

SECTION A-A

ALL DIMENSIONS IN mm

FOUNDATION DETAIL

1 3/3 1:75
PRECAST R.C.C. SLAB 1:2:4

12mm CEMENT PLASTER 1:4 FINISHED WITH CEMENT PUNNING IN SEMI CIRCULAR PORTION

BRICK WORK IN CEMENT MORTAR 1:6

CEMENT CONCRETE 1:3:6

CEMENT CONCRETE 1:5:10

SECTION B-B

PLAN

BRICK DRAIN FOR SEWAGE

<table>
<thead>
<tr>
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<th>Sheet No.</th>
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<tbody>
<tr>
<td>4</td>
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<td>1:10</td>
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SECTION A-A

CEMENT CONCRETE PIPE

PLAN

CHAMBER

ALL DIMENSIONS IN mm

<table>
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<th>SCALE</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>1/1</td>
<td>1:20</td>
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</tbody>
</table>
GROUND

SECTION B-B
SCALE: 1:75

R.C.C. SLAB 1:2:4
OPENING

PENSTOCK

OPENING

PENSTOCK

SECTION C-C

SCALE: 1:75, 1:1:30

DETAIL-B

PRECAST R.C.C. SLAB 1:2:4

GL

BENCHING

T.W.L

INVERT

SEPTIC TANK
(600 USERS)

ALL DIMENSIONS IN mm

SEPTIC TANK

DRAWN NO.
6

SHEET NO.
2/2

SCALE
1:75, 1:30
CONCEPTUAL DESIGN OF A TWO STOREY 4 SEAT COMMUNITY TOILET BLOCK WITH URINAL FACILITIES

ALL DIMENSIONS IN mm

GROUND FLOOR PLAN

FIRST FLOOR PLAN
CONCEPTUAL DESIGN OF AN EIGHT SEAT COMMUNITY TOILET BLOCK WITH BATHING & URINAL FACILITIES

PLAN

ALL DIMENSIONS IN mm

FRONT ELEVATION

CONCEPTUAL DESIGN OF AN EIGHT SEAT COMMUNITY TOILET BLOCK WITH BATHING & URINAL FACILITIES

DRAWING NO.

SHEET NO.

SCALE
FRONT ELEVATION

CONCEPTUAL DESIGN OF A TWO STOREY 11 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

<table>
<thead>
<tr>
<th>DRG. NO.</th>
<th>SHEET NO.</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1/4</td>
<td>1:75</td>
</tr>
</tbody>
</table>
GROUND FLOOR PLAN

ALL DIMENSIONS IN mm

CONCEPTUAL DESIGN OF A
TWO STOREY 11 SEAT COMMUNITY
TOILET BLOCK WITH BATHING,
WASHING & URINAL FACILITIES

<table>
<thead>
<tr>
<th>DRG.NO.</th>
<th>SHEET NO.</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2/4</td>
<td>1:75</td>
</tr>
</tbody>
</table>
CONCEPTUAL DESIGN OF A
TWO STOREY 11 SEAT COMMUNITY
TOILET BLOCK WITH BATHING,
WASHING & URINAL FACILITIES

FIRST FLOOR PLAN

DRG.NO.    SHEET NO.    SCALE
     10        3/4        1:75
CONCEPTUAL DESIGN OF A TWO STOREY 11 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

<table>
<thead>
<tr>
<th>DRG. NO.</th>
<th>SHEET NO.</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>4/4</td>
<td>1:75</td>
</tr>
</tbody>
</table>
CONCEPTUAL DESIGN OF A DOUBLE STOREY 14 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

ALL DIMENSIONS IN mm

<table>
<thead>
<tr>
<th>DRG.NO.</th>
<th>SHEET NO.</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>1/2</td>
<td>1:75</td>
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</table>
CONCEPTUAL DESIGN OF A DOUBLE STOREY 14 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

ALL DIMENSIONS IN mm

DRG. NO. 11

SHEET NO. 2/2

SCALE 1:75
CONCEPTUAL DESIGN OF A
TWO STOREY 22 SEAT
COMMUNITY TOILET BLOCK WITH
BATHING, WASHING & URINAL FACILITIES

SECTION AT A-A

SIDE ELEVATION
CONCEPTUAL DESIGN OF A TWO STOREY 22 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

SCHEDULE OF DOORS & WINDOWS

- Wooden Door
- Ditto
- Ditto
- Glazed Window
- Ditto
- Rolling Shutter
- Cement Conc.Jali

All dimensions in mm
FIRST FLOOR PLAN

CONCEPTUAL DESIGN OF A TWO STOREY 22 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

<table>
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<th>Dwg.No.</th>
<th>Sheet No.</th>
<th>Scale</th>
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<td>12</td>
<td>3/4</td>
<td>1:75</td>
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CONCEPTUAL DESIGN OF A TWO STOREY 22 SEAT COMMUNITY TOILET BLOCK WITH BATHING, WASHING & URINAL FACILITIES

Drg. No. 12
Sheet No. 4/4
Scale 1:75

ALL DIMENSIONS IN mm.

2nd FLOOR/TERRACE PLAN
CONCEPTUAL LAYOUT OF A COMMUNITY TOILET BLOCK WITH SEPTIC TANK & SOAKAGE PIT

DRG.NO. SHEET NO. SCALE
13 1/1 N.T.S