



SULABH SHAUCHALYA (HAND FLUSH WATER SEAL LATRINE)

by BINDESHWAR PATHAK

I deem it a privilege to be amidst you, though I have brought with me only my experiences in the latrine conversion programme undertaken by our organisation in Bihar and many other States in India. I would seek your guidance in tackling some of the problems which we are facing in the implementation of our programme of conversion of dry latrines into water flush ones.

Sanitary engineers, social scientists, planners and administrators all over the world are feverishly searching for economical, safe and hygienic system, other than the sewerage system and septic tank, for the disposal of human excreta which can be adopted on mass scale. The safe and hygienic disposal of night-soil is posing a problem both in urban and rural areas. The problem is particularly acute in cities and towns. So far no India-wide survey has been made to determine the depth of the problem. But whatever random survey has been made reveals that over 70 percent of the urban people are bereft of the sewerage or septic tank facility. They use either service latrines, drains, roads or open spaces for defecation which pollutes the atmosphere and leads to many types of diseases like cholera, diarrhoea, hookworm, tapeworm etc. Open air defecation and service latrines breed germs which cause disease like diarrhoea leading to dehydration and ultimately mass death among children.

Now here is a question mark. The sewerage and septic tank systems came into being in the years 1400 and 1460 respectively for the proper, safe and sanitary disposal of human wastes, yet why even today is a big chunk of the population deprived of this facility? When we think deeply over these issues we come to the conclusion that economic constraints, lack of space and political will, all these combine to bar mass adoption of the sewerage and septic tank systems. The septic tank system too is regarded as a safe and hygienic method for the disposal of human excreta. But even this system is so expensive that its adoption on mass scale has not been possible so far.

Growth of cities started in India after the Second World War. It was so rapid that

town planners and engineers were taken aback. Expansion went on in a hotch-potch way. Those who migrated to cities had rural orientation and began construction of their houses without caring for guide rules and regulations. Sewerage did not exist and the septic system was too costly. Hence they started constructing service latrines in their houses. As the system was cheap it attracted mass adoption.

Though negligible efforts were made earlier also, since 1940 onwards experts and engineers started hectic search for a safe and economical alternative to the sewerage and septic tank systems for disposal of night-soil. Various international agencies, notably the WHO, UNICEF and UNDP, have been engaged in evaluating the methods so that if there are any defects they could be removed and recommended for mass adoption. Here it is worthwhile to quote an eminent sociologist, Tylor's principle of 'psychic unity of mankind' and 'parallel growth of inventions'. A study of various books reveals that since 1950, in various countries of the world a search was on for an alternative to the sewerage and septic tank systems and some solutions were evolved according to their geographical, cultural and social conditions. Although all the alternatives may not have been useful, yet they were tried on an experimental basis and some success was achieved. Here it is to be noted that though all Asian, African and Latin American countries were busy searching for an alternative, there was no contact among them on the subject. VIP latrine, vault latrine, PRAI, ESP, Vietnamese latrine, RCA and Sulabh Shauchalaya etc. were the products of the above experiments. What to speak of other countries, even in India the research carried out in one State was not known to the other States till 1978.

#### THE BEGINNING

I took up this work in 1969 when I joined the 'Liberation of Scavengers Sub-Committee' of the Gandhi Centenary Celebrations Committee as a social worker. The Works and Housing Ministry of the Government of India at that time directed all the State Governments to convert all existing service latrines into flush latrines during the

Gandhi Centenary period, as a tribute to Mahatma Gandhi. It also directed them to connect service latrines with sewers wherever available and with leaching pits where there was no sewerage system. The design of the leaching pits was also sent by the Union Government. The same year the Harijan Sevak Sangh also sent several designs of hand flush latrines including PRAI, ESP and RCA. At that time I came across the book 'Excreta Disposal for Rural Areas and Small Communities' by Wagner and Lanoix. I read the book thoroughly and came to the inescapable conclusion that the pit privy system alone was the best among all the heterogeneous mass of latrine designs produced in the World. Mr Rajendra Lal Das, my co-worker in the field, was then propagating the 'Sulabh Swaksh Shauchalaya'. In the designs sent by the Government of India, there was provision for only one pit and it was suggested that when one pit was full the second one should be constructed. This did not convince me and I decided that the two pit system alone could serve the purpose, as it was not practicable to construct a second pit over-night. Secondly, the cost of construction of the second pit would go up with the passage of time; and thirdly, the very objective of relief of scavengers (Bhangi Mukti) would be defeated as fresh excreta will need cleaning by scavengers alone. Hence I fell in

line with Mr Das's design and made certain modifications. The modified design was named 'Sulabh Shauchalaya' and I started popularising it for adoption on a large scale.

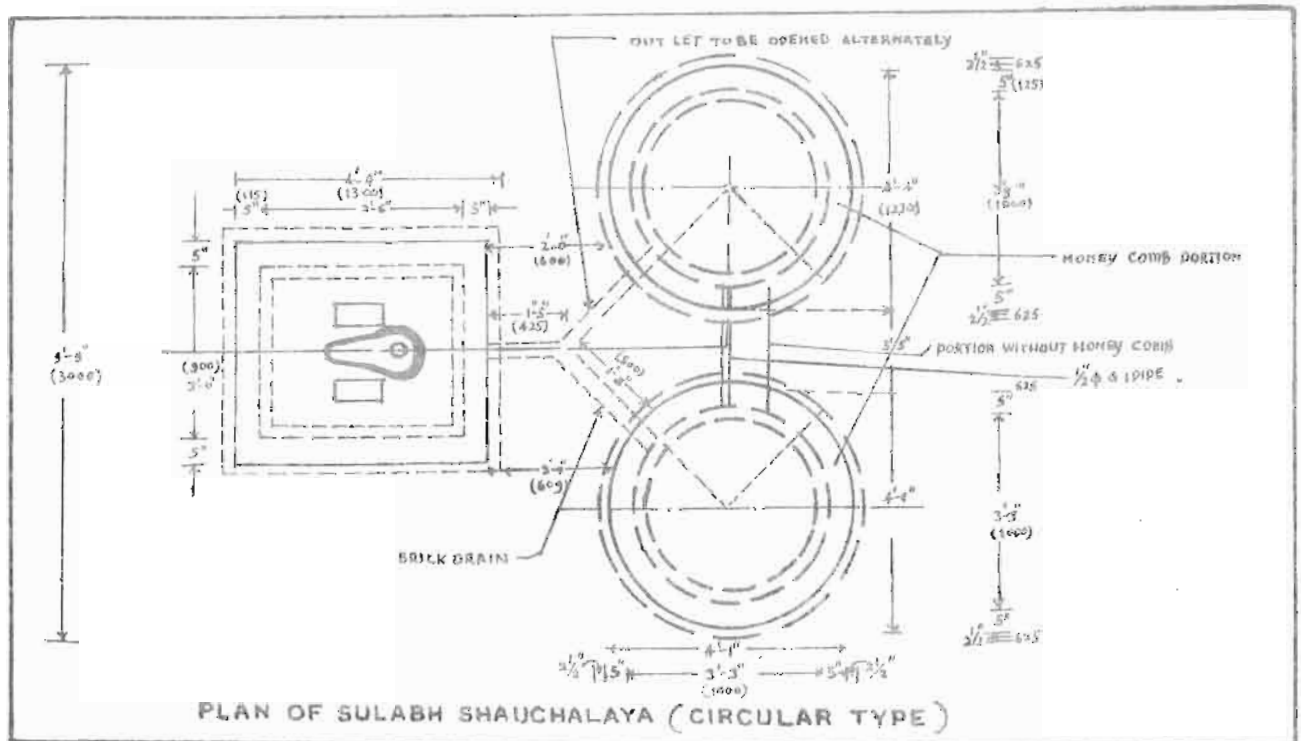
#### SULABH SHAUCHALAYA

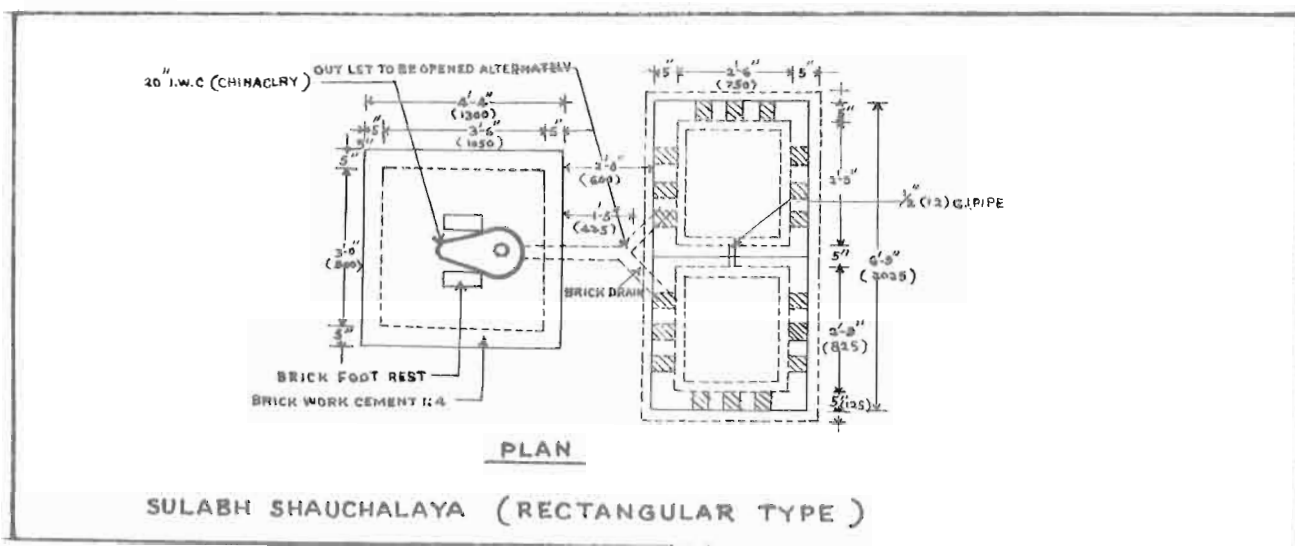
'Sulabh Shauchalaya' is a hand-flush water-seal latrine. Wagner and Lanoix in their book have laid down seven conditions for a sanitary latrine. Sulabh Shauchalaya fulfills all these seven conditions.

Sulabh Shauchalaya mainly consists of plinth, pan, water-seal, drain, tanks and tank cover. The pan and water-seal are connected with two leaching pits, out of which one functions at a time while the other is kept closed. The second pit is opened for use when the first is filled up. While the second pit is in use, the human excreta gets transformed into manure in the first tank. Under this system one pit is filled up in about 3-4 years when used daily by 6-8 persons.

#### Design of Sulabh Shauchalaya:

The design of Sulabh Shauchalaya is illustrated in the following diagrams:





### Salient Features:

Some of the salient features of the Sulabh Shauchalaya are given below:

1. It is quite odourless as the gases produced in the tank are absorbed by the soil.
2. There is no danger of air pollution as the water-seal prevents the gases from leaking out of the pit and, as such, no gas-pipe is needed.
3. It is very easy to construct and it also involves less cost.
4. It requires a small space and can be provided even in the corridor, verandah or the bedroom of the house.
5. It can be constructed in different soil conditions and under varying depths of sub-soil water-table.
6. The human excreta collected in the pit is transformed into organic manure which can be used in fields and gardens.

Sulabh Shauchalaya is not only cheaper than other designs, but its construction materials are also locally available. Even the pan is locally manufactured. Further, no royalty is imposed on it and, to top all, it is free from patent registration. It is a concept and any individual or organisation can use its name freely. This goes to prove that it is an appropriate technology. We have developed designs ranging in cost from Rs.100/- to Rs.800/- (£ 1.0 = Rs.16.65 as on 14.10.1981) so that it can be adopted by the rich and poor alike. It is an alternative to sewerage and septic tank.

### DEVELOPMENT

In Bihar nearly 50,000 service latrines have been converted into Sulabh Shauchalaya with the help of the Urban Development Department of the State Government, and 2,50,000 more will be converted in the next five years. In West Bengal, about 4,000 service latrines have been converted with the collaboration of the Calcutta Metropolitan Development Authority (CMDA) and 1,50,000 more will be converted within next few years. About 1,000 Sulabh Shauchalaya have been constructed each in Andhra Pradesh and Orissa. A similar project is to start soon in Tripura, Uttar Pradesh, Madhya Pradesh, Haryana and Jammu and Kashmir. So by all accounts, the two pit system with water-seal which we have developed is the finest and most acceptable in the world for those who use water for cleaning. The basic functioning of the Sulabh Shauchalaya system will remain the same though its size, construction cost etc. may vary from place to place. The technique of Sulabh Shauchalaya was unknown outside Bihar till 1978. Its diffusion started just after the national seminar convened by the Government of India, in collaboration with the WHO and the UNICEF, in Patna in May 1978; and presently it is functioning in four States of the country and is likely to cover the remaining States in the near future. The technology has now been accepted on an international level. About 1,000 Sulabh Shauchalayas have been constructed so far in the neighbouring country of Sri Lanka. Bangladesh and Nepal are also contemplating adoption of this technology. The UNDP is also evaluating its technique and it is expected

that the system will be recommended for mass adoption. If the Government of India wants to achieve the sanitation target of UN Decade by 1990, the Sulabh Shauchalaya could be only solution. According to our assessment, there are 41,00,000 service latrines throughout India which will need about Rs.300 crores for conversion.

#### BIRTH OF SULABH INTERNATIONAL

It will not be out of place to mention here that technology alone won't lead to mass acceptability. The people will have to be motivated for its adoption and follow-up action will also be needed. Propagation of technology was the main object of the Bhangi Mukti cell of the Gandhi Centenary Celebrations Committee, with which I was previously associated. I was firmly of the view that without active participation in the implementation of the scheme, mass adoption of the technology was out of question. As the officials of the organisation did not agree to my views, I had no option but to resign and form a new organisation which is now called the 'Sulabh International' (formerly Sulabh Shauchalaya Sanstan). This was registered under the Societies Registration Act XX of 1860. I evolved a methodology for adoption of the technology on a mass scale. The Government of Bihar took four years to scrutinise and accept my methodology, according to which workers of our organisation go from house to house and maintain contact with the house owners. When house owners agree, further action is taken by the organisation in securing grant and loan for the beneficiary from the concerned Municipality. Its workers carry out the construction. A five year guarantee card is issued to the house owner, during which, if any defect is found in the construction, it is corrected free of cost.

#### PUBLIC CONVENIENCES

The Sulabh International constructs public latrines, baths and urinals and maintains them well. In Patna alone 551 public latrines, 52 urinals and 33 baths have been constructed at 36 places. About 50,000 people are daily availing the facilities. In the Metropolitan City of Calcutta a 60-seat public latrine and bath complex has been constructed and about 1,500 persons are using this facility daily. Two more public conveniences have also been constructed there recently. Similar facilities have been provided in some other States like Orissa and Madhya Pradesh. In Andhra Pradesh, Uttar Pradesh Haryana and Jammu and Kashmir this system

is going to be introduced soon.

#### SOCIO-ECONOMIC ASPECTS

The Xavier Institute of Social Services, Ranchi (Bihar), India, has conducted a survey on the socio-economic aspects of the Sulabh Shauchalaya system at Ranchi. The beneficiaries have expressed the view that the incidence of epidemics has decreased after the introduction of the Sulabh Shauchalaya system.

#### ROLE OF VOLUNTARY AGENCIES

Here I want to make it clear that neither governmental nor non-governmental agencies can execute the scheme independently. It requires the close cooperation of both as each of them has its own limitations in arranging funds and materials. I want to emphasise that if Sulabh Shauchalaya is adopted on a mass scale, the sanitation problem can be solved to a large extent.

Now I request the participants of this seminar to consider the need for a co-ordinated effort through the help of a voluntary agency in achieving the targets. The voluntary agencies will also provide useful feed-back to the municipalities, the State Governments and the Central Government. Such an agency can also coordinate efforts in various developing countries and help smooth flow of information about the problem and the methods being adopted to solve it in different countries.

It is my firm conviction that today or tomorrow all the under-developed and developing countries will have to adopt the Sulabh Shauchalaya System for sanitary disposal of human excreta. Sewerage and septic system are not the answer.

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