



ENVIRONMENT SUSTENANCE THROUGH WATER QUALITY

MANAGEMENT IN HOSPITALITY INDUSTRY

By

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Abstract

Laundry forms an invisible yet important part of the hospitality business by making a statement for the quality of services offered. Laundering procedures followed in hotels in India have made a transition gradually moving from hand washing and pressing to mechanized laundries. Five star hotels started having in-house laundries since 1970s. Research indicates in-house laundries give the hotels benefits like maintaining high standards of quality, reduce the stocks required, increase self sufficiency and flexibility while maintaining consumer satisfaction.

Thus the objective was to study the amount of water used by an in-house laundry, evaluate the quality of water and assess the amount of chemicals in the drain water after the process of laundering. The study was conducted in five star hotels in Mumbai. Tools employed to collect the data were multi-method such as questionnaire and interview schedule, sample collection and

testing (fresh water and drain water samples). Tests were conducted to evaluate the quality of water and to assess the nature and amount of residual chemicals in the drain water.

The results reveal that the hotels having in-house laundries maintain the quality of water used, by conducting daily checks on the fresh water. Results from the data collected show that the drain water is filtered in effluent treatment plants and reused for gardening and flushing purposes. 2% of the entire water used for laundering is drained. Stringent checks at all points by the hotels ensure that the residual chemicals in the drain water do not exceed specified limits as standardized by the Pollution Control Board, thus ensuring an eco-friendly environment.

Key-words

In-house laundries: Fully functional laundry situated within the hotel premises

Five star hotels: Hotels accredited with five star rating by FHRAI

Dhobi-ghats: Open air Laundromats

Commercial out-source laundry vendor: Establishment undertaking washing and pressing of soiled linen for institutions

FULL LENGTH PAPER

INTRODUCTION:

India is emerging as a leading travel destination; the world's leading travel and tourism journal, "Conde Nast Traveler" (2000), has ranked India amongst the top four preferred holiday destinations in the world. The importance of the Travel and Tourism sector for the Indian economy is evident from the fact that it has contributed 5.9% of the Gross Domestic Product and provided employment to 41.8 million people. To endow the travellers with a memorable stay, and provide world class service is the major aim of the Hospitality Industry.

Amongst all the major contributors of the hospitality industry, the laundry forms an invisible yet important part of the business by making a statement for the quality of services offered.

The rapid developments in the laundry industry internationally have also contributed to the modernization of laundry services in India. Hotels in India have made a transition gradually, moving from hand washing and pressing to mechanized laundries. Currently, laundry services offered by the hotels do not cater only to the washing of the garment, but also includes stain removal and mending of the garment if required. Presently, most of the five star hotels have their in-house laundries, whereas the three star and four star hotels send their linen to commercial mechanized laundries for washing. Very small organizations and some restaurants still rely on the dhobi-ghats for the washing and pressing of their linen.

Hotels have the choice of using an in-house laundry service or a commercial out-source laundry vendor for the laundering of linen. Various factors need to be considered before making a decision on the type of laundry service to be used. Each type of laundry service has its own distinct advantages and disadvantages.

In an in-house laundry service, the entire setup of the laundry is located within the premises of the hotel. The hotel staff is accountable for maintaining the process of laundering and also for the quality of services offered. The distinct advantages of an in – house laundry are maintain high standards of quality and cleanliness, reduce the stocks required, gives self sufficiency and increased flexibility and also helps to maintain consumer satisfaction.

A commercial laundry service is a stand – alone laundry which undertakes the washing of linen / garments for any establishment for a price. This type of an arrangement is a contractual between the establishment and the stand – alone laundry hence this type of a laundry service is also referred to as Contractual Laundry Service. Some of the advantages of a commercial laundry service as listed by the hotels are increased productivity, special skills not required by the hotel staff, and utilization of hotel space for maximum benefit

OBJECTIVE OF THE STUDY:

Laundry is an essential function for all institutional housekeeping departments, not only contributing to comfort and aesthetics, but also assisting with infection control. Laundry services

whether outsourced or handled in house, requires implementation of innovative programs and technologies which can reduce environmental impact. Laundry processing because of its high level of energy, chemical and water consumption also has a significant impact on the environment and economic resources. The objectives of the study are:

1. To study the amount of water used in the process of laundering.
2. To evaluate the quality of water used in the process of laundering.
3. To assess the amount of chemicals in the drain water after the process of laundering.

METHODOLOGY:

The study was conducted in thirty hotels in Mumbai, of which twenty one hotels were of 5 star status, six hotels were of 4 star status while three of the hotels were of 3 star status. The sampling technique was reliance on available subjects.

The study was conducted in two parts, i.e., data collection on the existing laundry procedures followed by the hotel industry and water quality assessment.

In the first part of the study, information was collected on the existing laundering procedures used in the hotels so as to assess the amount of water utilized in the process of laundering. The tools employed for the data collection were questionnaire and interview schedule.

The second part of the study assessed the water quality and the amount of chemicals present in the drain water. To accomplish this, fresh (one sample) and drain water (three samples) samples were collected from the participating hotels and tested. The tests conducted were in accordance with the Environment (Protection) sixth Amendment Rules, 2009, Ministry of Environment and Forests. The tests conducted were pH, BOD (Biological Oxygen Demand), Oil & grease and Total Suspended Solids.

Of the thirty hotels in which the questionnaire was implemented, only sixteen hotels have an in-house laundry of which only eight hotels allowed the collection of water samples from their premises. The fresh water and wash drain water samples were collected from the hotels. The drain water samples were collected from the washing of bed linen, bath linen and F & B (food and beverage / kitchen). The drain water from the three wash cycles was drawn in equal quantities and mixed together. The total number of samples drawn from the hotels and tested was 32.

RESULTS & DISCUSSION:

On the basis of the data collected in the study, the laundry procedure followed in the hotels can be broadly categorized as collection of soiled linen, segregation of the soiled linen, washing of linen, drying / pressing of linen, finishing of linen and delivery of linen.

The broad steps in the laundry process remain the consistent; however some changes can be noticed in the process depending on the type of linen being laundered. Linen from rooms (bed and bath linen provided in every guest room) forms the bulk of the soiled linen in every hotel. Every room generates 9 – 11 kg of linen per day depending on the star status of the hotel.

In addition to the room linen, soiled linen is also generated from the uniforms of staff, linen from the Food and Beverage department, additional services provided by the hotel like swimming pool, spa, gymnasium, etc. Guest laundry also contributes to the linen being washed on a daily basis. On an average a hotel with 200 rooms generates about 2500 kg of linen on a daily basis.

One of the main resources utilized in the process of laundering is water. Washing every kilogram of soiled linen requires 21 – 24 litres of water. Of the hotels included in the study, 87% of the hotels use an Effluent Treatment Plant, where the water drained from the laundry is recycled and reused within the hotel premises. Of all the water used in the hotel, only 2% of the water is drained.

However, it can be noted that the values of pH and BOD are the highest for Hotel V, whereas the lowest value of pH was exhibited by Hotel III. Similarly, Hotel II and Hotel VIII exhibit the lowest value for BOD. None of the fresh water test samples have oil and grease present in them.

The test results of the fresh and drain water samples for hotels are presented as follows

Table No. 1 *Test results of fresh water samples of hotels*

Parameters	Standards	Hotel I	Hotel II	Hotel III	Hotel IV	Hotel V	Hotel VI	Hotel VII	Hotel VIII
pH	5.5 – 9.0	7.6	6.6	5.5	7.9	8	7.3	7.2	7.7
BOD, 3 days, 27	0 – 30 mg/l	8	0	4	9	25	12	8	0

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Total suspended solids	0 - 50 mg/l	<1	<1	<10	<10	<10	<10	<10	<10
Oil & grease	0 - 10 mg/l	0	0	0	0	0	0	0	0

Most of the hotels use water which is obtained from BMC (Brihan Mumbai Corporation) and tankers. Water obtained is first treated in water softening plants (seven out of eight hotels have a water softening plant) and then used in the hotel for various end uses. The water treatment conducted by the hotels reflects positively on the test results, projecting low values for the conducted tests.

The average readings of the test results for the drain water samples of hotels are presented in Table No. 2. It can be observed that 50% of the hotels (Hotel IV, V, VI and VII) exceed the specified limit of BOD as specified by the Ministry of Environment and Forests. The highest value of BOD in the drain water sample is recorded for Hotel V, which also has the maximum value of BOD in the fresh water sample. BOD is a measure of the amount of oxygen used by micro-organisms in the oxidation of organic matter. High values of BOD indicate lesser amount of oxygen is available for aquatic organisms.

In terms of pH value, it may be noted that, though the pH value of Hotel IV is within the specified limits, it is equal to the highest upper limit specified in the Environment (Protection) sixth Amendment Rules, 2009. Hotel III exhibits the lowest pH value for fresh as well as drain water samples, indicating good water quality and control over the process of laundering.

Table No. 2 Test results of drain water samples of hotels

Parameters	Standards	Hotel I	Hotel II	Hotel III	Hotel IV	Hotel V	Hotel VI	Hotel VII	Hotel VIII
pH	5.5 – 9.0	7.77	7.4	7.13	9	8.25	8.04	8.27	7.85
BOD, 3	0 – 30	8.34	12.34	18.67	52.34	106	39.67	66.34	16

days, 27 C	mg/l								
Total suspended solids	0 - 50 mg/l	10.8	8.26	<10	<10	<10	<10	<10	<10
Oil & grease	0 - 10 mg/l	0	0	0	0	0	0	0	0

The values for total suspended solids fall within the range for all the hotels. The efficiency of the hotel in-house laundries is good as no traces of oil and grease can be seen in the drain water samples. The linen from food & beverage department as well the spa in the hotel contains a high content of oil / lotions which are effectively emulsified in the wash process.

CONCLUSION:

The hotels having an in-house laundry are aware of the environmental concerns and take adequate measures to reduce the impact of the laundering process on the environment. Some of the steps taken by the hotels include: use of phosphate free chemicals, use of water softening and / or effluent treatment plant, use of auto-dispensers for chemicals, appropriate disposal of perchloroethylene sludge as per norms, recovery and reuse of the solvent for dry-cleaning.

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