



Raffles Junior College

Ascending the Loo Ladder

Project Work 2006 Written Report

Project Task: 1

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Date of Submission: 15 September 2006, Term 4 Week 1

Word Count: 3015



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1 Introduction

1.1 Overview

Public restrooms are part and parcel of our daily lives. In a clean and green country like Singapore, development has allowed most of these restrooms to achieve basic hygiene standards. In addition, this momentum can be continued by incorporating comfort as well.

Our group has decided on this project of integrating comfort into public restrooms to maintain the momentum of development. We will focus on hawker centre restrooms as hawker centres are hotspots to both tourists and locals alike, thus it is important that the restrooms are kept clean and comfortable.

However, Singapore's restroom conditions still trails behind Japan's by 15 years (Tan Hwee Hwee, 2006). Filthy restrooms are a sore problem that Singaporeans encounter daily, yet it is seldom addressed by our youths.

Ultimately, further development of public restrooms will bring plenty benefits.

1.2 Aims and Objectives

We aim to maintain the development of Singapore hawker center restrooms by solving existing problems in the current system using technology and government policies. By making restrooms more comfortable to use and enhancing current facilities through adapting similar policies used by other countries, we can achieve a higher standard of cleanliness and comfort. Essentially, our aim is to raise awareness and provide solutions to solve restroom problems in Singapore, hence projecting it as a clean and green city for all to see.

2 Literature Review

2.1 Past Developments

Singapore neither had a well-developed sanitary system nor comfortable restrooms in the past. Most restrooms were under a bucket system and they were smelly, uncomfortable and unhygienic.

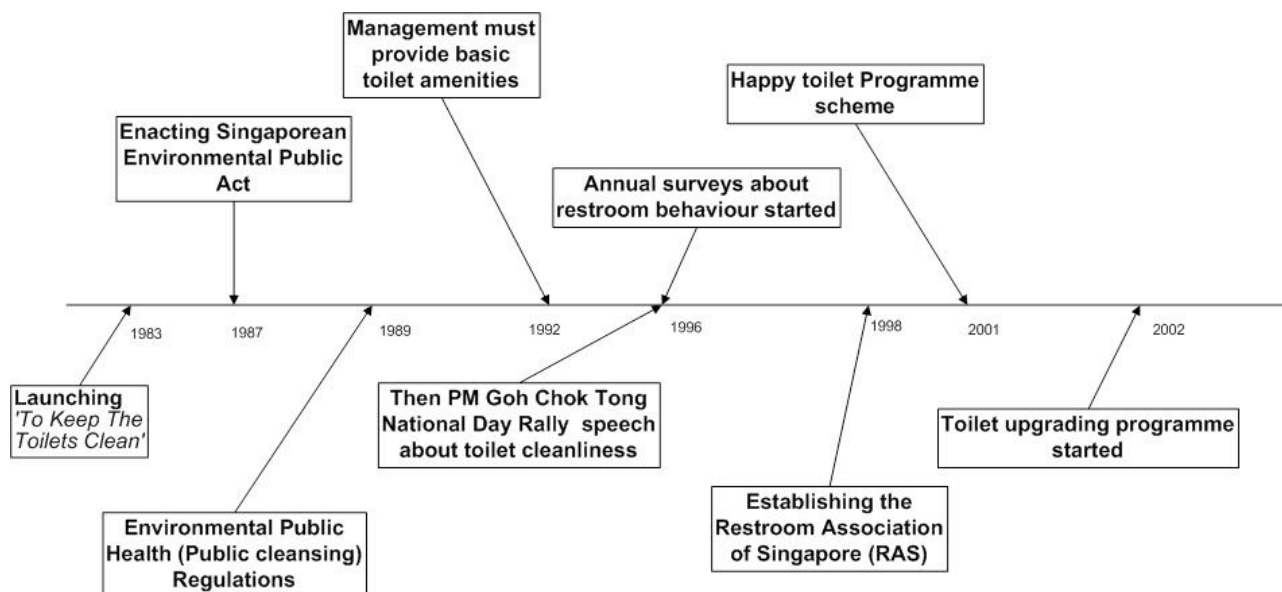


Figure 1: Timeline of Past Developments

Below are the past efforts to maintain cleanliness in hawker centre restrooms.

'To Keep The Restrooms Clean' campaign was launched by the Ministry of Environment (ENV) in July 1983, requesting management of premises to ensure that restrooms were functioning well and kept hygienic. Talks and exhibitions were held at community centres and the public was educated through materials handed out by MOE (NEA, 2004).

Enacting the Singaporean Environmental Public Health Act in 1987 places responsibility of the functionality and cleanliness of a restroom on the owner, occupant or principal tenant of a building. Under Section 55 of the Environmental Public Health Act, the owner, occupant or

principal tenant has to ensure that sanitary services are in good, working conditions, ensuring that these services are clean, odourless and hygienic. Hence, the owners were compelled by law to take responsibility for maintaining satisfactory restroom conditions (NEA, 2004).

Under the Environmental Public Health (Public Cleansing) regulations, the ENV issued a regulation on July 1989 requiring users to flush urinals and water-closets (WCs).

It was made mandatory for all management of public restrooms to provide basic restroom amenities under the Environmental Public Health (Public Cleansing) regulations in December 1992 (NEA, 2004).

During the 1996 National Day Rally speech, then Prime Minister (now Senior Minister) Goh Chok Tong called for clean public restrooms as one of the markers of a gracious society (Goh Chok Tong, 1996).

The Restroom Association of Singapore (RAS) was established in 1998 to further promote clean public restrooms, educating the public and training professionals in this aspect (RAS, 2006).

The 'Happy Toilets' Programme was started by the Restroom Association of Singapore in 2001. It is a voluntary scheme which assesses the cleanliness of public restrooms. A plaque and certificate is awarded to restrooms that have three, four or five stars (RAS, 2006).

Annual surveys on restroom behaviors have been conducted since 1996. It enables the ENV to know how the public will respond to certain adjustments of the designs of restrooms (Lim Swee Say, 2001).

The Toilet Upgrading Programme (TUP) for Housing and Development Board (HDB) coffee-shops was set up on May 2002 to upgrade facilities in hawker center HDB restrooms. The service was further extended to hawker centers in pre-war shophouses. Incentives were given, with the NEA co-paying 50% of the upgrading costs (subjected to a maximum of \$5,000 per coffeeshop) for owners who choose to participate in the programme (NEA, 2001).

2.2 Current Momentum

The basic facilities which most restrooms possess are sinks, bins, hand-dryers, toilet roll dispensers, ventilation system and facilities for the disabled. There is a need for additional facilities so that we can further improve restroom cleanliness and comfort to maintain momentum.

Ongoing efforts to improve the restroom include the Happy Toilet Programme, 'Singapore's OK' Programme and the Toilet Upgrading Programme. Organisations responsible for sustaining momentum are the RAS and NEA.

2.2.1 Photographs of Current Momentum

2.2.1.1 Restroom Facades



Figure 1a: Restroom Entrance 1 (Toa Payoh Lorong 7, Hawker Centre Block 22)



Figure 1b: Restroom Entrance 2 (Ang Mo Kio Avenue 4, Hawker Centre Block 160)



Figure 1c: Toilet Entrance 3 (Ang Mo Kio Central, Hawker Centre Block 724)

2.2.1.2 Restroom Policies and Campaigns



Figure 1d: Notice (Restroom Management)



Figure 1e: Signs and Notices at Restroom Entrance ("Singapore's OK" Sticker and Restroom Working Schedule)



Figure 1f: 'Singapore's OK' Signboard Outside Restroom

2.2.1.3 General Restroom Facilities



Figure 1g: Urinals without Modesty Board



Figure 1h: Urinals and Modesty Boards



Figure 1i: Female Handicap Toilet - Toilet Bowl, Support Handrail, Toilet Roll Dispenser, Automatic Flush, Sanitary Bin

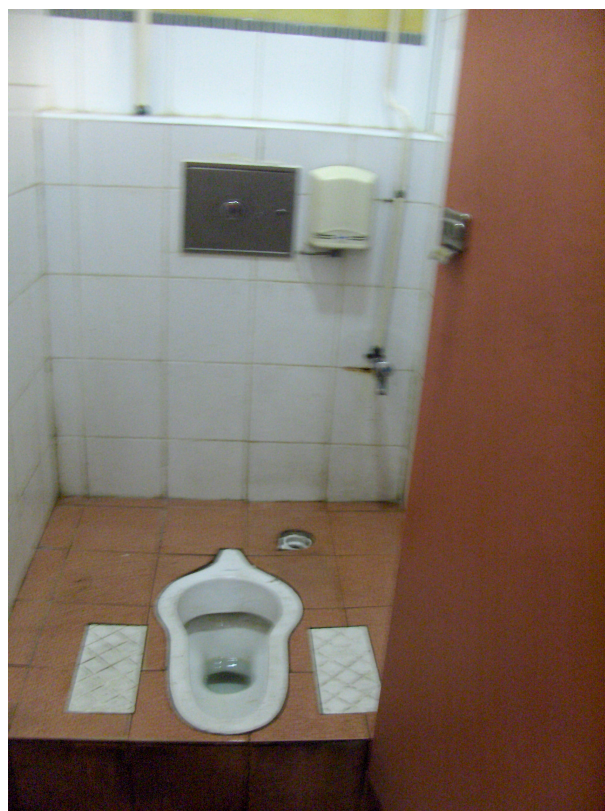


Figure 1j : Squat Toilet



Figure 1k: Basins



Figure 1l: Ventilation Fan

Source for Figures 1a to 1l: RJ140

2.3 Societal Benefits of Developments

With more pleasant public restrooms, users will appreciate the efforts placed into the maintenance of the facilities and thus treat restrooms responsibly. Citizens will also take pride in our public restrooms, just as in countries like Japan. As hawker centres in Singapore are frequented by tourists, such improvements will leave them with a better impression of our clean and green nation. Negative public perception towards restroom cleaners may generally change for the better as more people see the restrooms in new light.

Our unique culture of hawker centres with local delicacies has always been a selling point to tourists. They are generally impressed with our clean restroom and high sanitary technology such as the automatic flushing system. Thus there is a need to sustain this momentum, especially when expectations of tourists will be higher in the coming years when Singapore is diversifying into a tourist hub.

3 Methodology

After deciding on a suitable and feasible topic to embark on, our group collected information about local developments of public restrooms. We identified areas that can be improved by conducting further research and surveys. After compiling the survey results, we identified the most prevalent problems faced by public restroom users and suggested solutions to these problems. Interviews with professionals were conducted and we refined our solutions based on the interviewee's professional advice and expertise. We then evaluated the practicality and our solutions.

4 Solutions for Maintaining Momentum

To maintain the momentum of current developments in hawker centre restrooms, our group is proposing certain key changes as well as new concepts to both technology and policies concerning public restrooms, targeting the various problems they face.

4.1 Technology

According to our survey (Figure 2), 94% of the respondents feel that implementing better facilities into hawker centre restrooms will encourage them to keep restrooms cleaner. We have hence introduced several state-of-the-art technological aspects to meet the demands of the public. These technological solutions will result in cleaner, more hygienic and odourless restrooms.

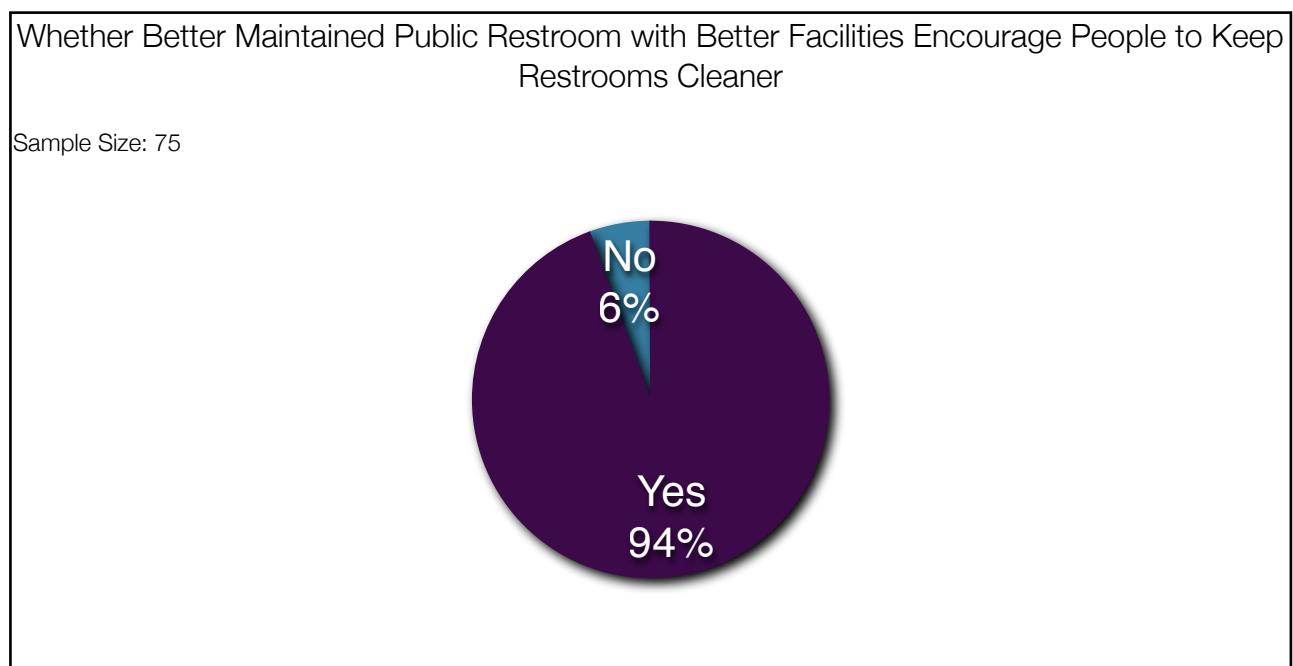


Figure 2: Survey Question 6 Results

4.1.1 Incorporating Nanotechnology

Conventional toilet bowl glazes contain ions that can repel particles. However they are not uniformly spread across the surface – leaving about 50% of the surface susceptible to waste and bacteria adhesion. These residues breed bacteria and emit a foul stench if they are not cleansed promptly. Cleaning conventional toilet bowl using ordinary scrubs may in fact roughen the surface even more (Figure 3), allowing an increasing amount of residue to adhere to it over time (Norm Wu, 2006). With nanotechnology-treated toilet bowls by brands such as SaniGloss, the microscopic pores of the conventional toilet bowl surface is eliminated hence any dirt, mold or bacteria is unable to adhere to it (Figure 4).

Any waste that inadvertently adheres to the surface can be rid off with just a simple flush.

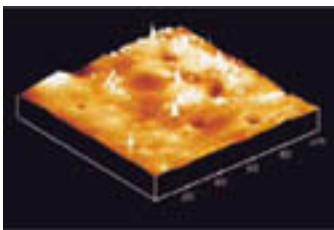


Figure 3: Conventional Toilet Bowl Surface

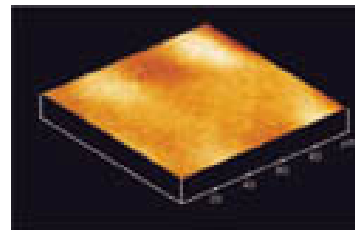


Figure 4: Toilet Bowl Surface with Nanotechnology

Source for Figure 3 and 4: <http://www.extremetech.com/article2/0,1558,1820013,00.asp>

According to our survey (Figure 5), the presence of foul odours is one of the main problematic areas identified. The contributing sources of foul odours in public restrooms are uric acids propagating ammonia as well as to a lesser extent, residues stuck to the surface of toilet bowl (Colin See, 2006). While nanotechnology-treated toilet bowls can eliminate residues from surfaces, it cannot eradicate uric acids directly. However it is maintenance-free and water conserving, offering users a hygienic and pleasant toilet experience. This also allocates restroom cleaners more time to other tasks such as cleaning urinals. Therefore, nanotechnology proves itself a valuable aspect to our project since it helps to achieve our aim of implementing comfort into pub-

lic restrooms and partially solving the problem of foul odours. Finally, Nanotechnology-treated toilet bowls are only slightly more expensive than their counterparts.

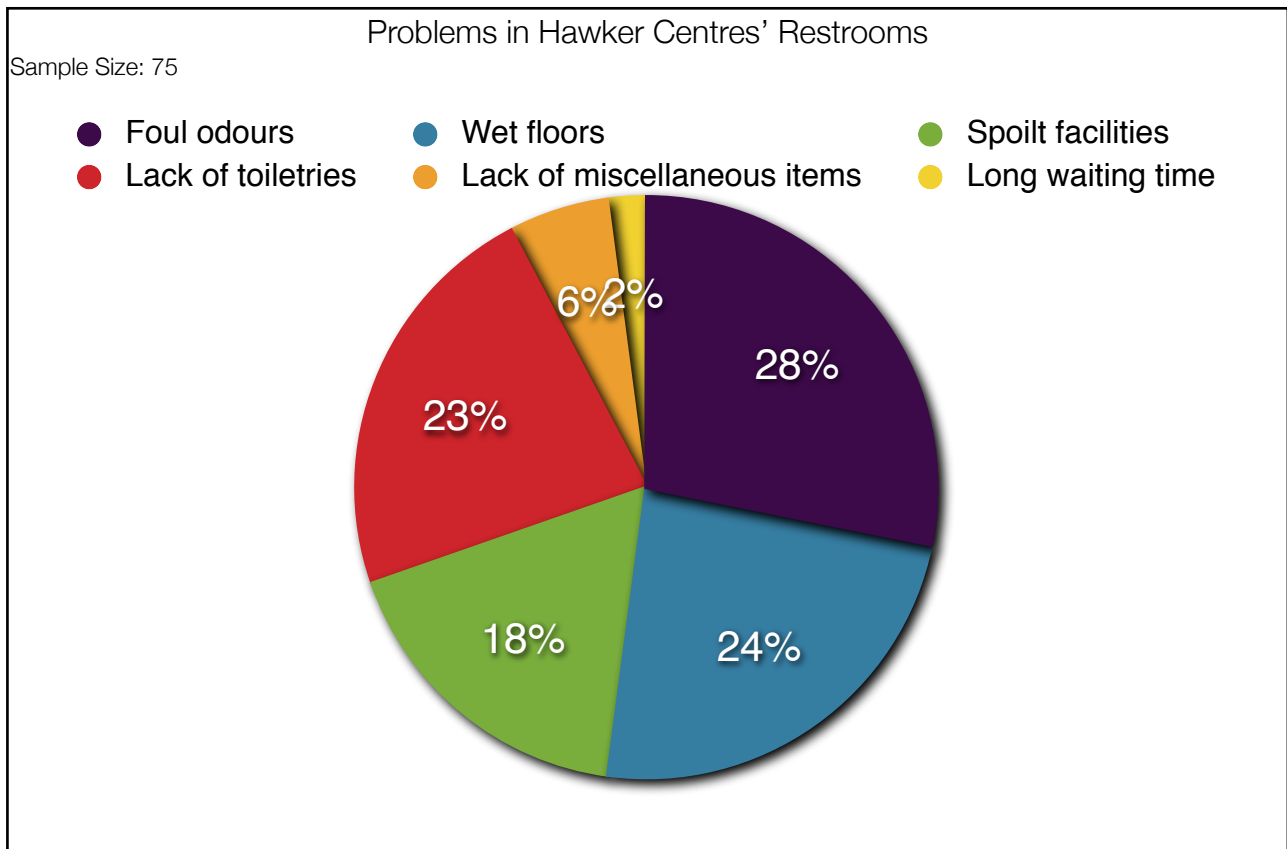


Figure 5: Survey Question 3 Results

Source: RJ140

4.1.2 Miracle Seat

Foul odours can be reduced or even totally eliminated by introducing an innovative toilet seat which absorbs the stench even before it can diffuse into the air. Produced by the Miracle Seat Company, the Miracle Seat (Figure 6) vacuums microscopic airborne particles including viruses and bacteria from the toilet bowl through a series of 5 slits located on the underside and vents them outside the building.¹ The suction effect of the vacuum is produced by an integrated electric fan.



Figure 6: Miracle Seat (Vents' View)

Source: <http://www.miracleseat.com/products.php>

The Miracle Seat also presents medical and hygiene advantages because it has the ability to vacuum germs and viruses from the air (Miracle Seat, 2003).

However, the Miracle Seat requires installation of an air duct which leads to the disposal area of foul odours, germs and viruses. Some renovation work may be needed which is an inconvenience.

¹ Refer to Appendix B for in-depth details of these viruses and bacteria.

4.1.3 Charcoal Smell Absorbers

A less costly alternative in the short run would be to incorporate activated charcoal filter linings into the toilet seat instead of using an air duct so that the charcoal can absorb the stench emitted. This is seen in the case of the Aspidor “No Odour” water closet seat (Figure 7). Microchip-controlled heat sensors on the toilet seat react to body warmth when a person uses it, activating its induction fan to pull air around the toilet dish into the suction chamber behind. Charcoal filters (Figure 8 and 9) then prevent the odours from escaping. The Aspidor Seat utilizes a rechargeable battery (Figure 8) instead of electricity from the mains for safety concerns (Red, 2006).

However, it may not eradicate bacteria and viruses as effectively as the Miracle Seat because the suction chamber is still located in the toilet itself and the viruses and germs may be able to escape the charcoal filter. Furthermore, the cost of replacing the charcoal filter in the long run may be more than the one time installation fee of the Miracle Seat.



Figure 7: Aspidor Toilet Seat (Suction Chamber at the Back)

Source: <http://www.redferret.net/?p=6476>



Figure 8: Aspidor Seat Interior (Rechargeable Battery on the left, Charcoal Filter on the right)



Figure 9: Aspidor Seat Interior (Suction Fan and Microprocessor Chip, which is connected to the red and black wires.)

Source for Figures 8 and 9: http://www.aspidor.com/index.php?menu_id=2

Charcoal smell absorbers can also be further extended to include urinals by placing them at strategic positions so as to effectively absorb ammonia which are the cause of foul odours emitted from urinals as urine acid or urea breaks down to form it.

4.2 Policies

4.2.1 Restroom Training Scheme

The World Toilet Organisation (WTO) has set up the World Toilet College (WTC) in Singapore (Republic Polytechnic and Singapore Polytechnic) with its aim to ensure that the standards in restroom design, cleanliness, maintenance, quality of work and sanitation technologies are kept at optimum levels. The academy is committed to offer various training programs catered for design, cleaning and sanitation. The Restroom Specialist Training Course is one such example. It educates cleaners to a new professional level by reassigning their conventional du-

ties (RAS, 2006). Colin See (2006) commented that in the local restroom sectors, there are many restroom cleaners who are still not well-trained. Furthermore, survey results (Figure 5) show that some of the most distressing problems in hawker centre restrooms are dysfunctional hardwares and the dearth of facilities to which well-trained cleaners will be able to handle appropriately. Hence, the aim of this scheme is to provide hawker centre restroom cleaners with opportunities to undergo this course. With these acquired skills, which cover all aspects of restroom cleaning and maintenance, the above-mentioned problems will be ameliorated. Moreover, salaries of newly skilled restroom specialists will rise to over S\$1000 a month when re-entering the workforce (Ken Teh, 2005).

Firstly, the scheme aims to acquire subsidies for the restroom cleaners. This is because most restroom cleaners come from low income families and are not able to afford this course.

Thus, a subsidy is essential. Possible avenues to obtain subsidies for the cleaners is through the Skills Development Fund (SDF) of the Singapore Workforce Development Agency (WDA) and the companies that employ the restroom cleaners. SDF encourages the upgrade of skills of workers by providing financial assistance to their employees (SDF, 2006).

Currently, there is a job creation initiative for the restroom sector to enhance the jobs of restroom cleaners. This joint initiative by the WTC, RAS, National Trades Union Congress (NTUC), WDA and Singapore Employers Federation (SNEF) is a possible avenue to start the Restroom Training Scheme (Zee Yoong Kang and Jack Sim, 2006).

Secondly, the scheme raises the awareness of hawker centre restroom cleaners of the availability of such a course. This is done by presenting this scheme and in particular, the scope of

the course², to the companies (i.e. SembWaste) that employ them. It is also appropriate to approach the cleaners directly to give them a better understanding of the benefits (i.e. new capabilities and cleaner restrooms) of such a course.

Thirdly, the course must be tailored slightly to suit the cleaners. Courses are usually conducted in English but most of them do not know the language. Hence it can be conducted in the Mother Tongue languages or in dialects that the cleaners are able to comprehend.

Although the benefits of the scheme may seem tangible, there are limitations to it. The companies may choose not to send their employees for the course because of the cost.

Restroom improvements are therefore not achieved. Also, the cleaners may choose not to employ the new cleaning techniques after the entire course; they may not have access to modern equipments such as special chemicals to clean uric acids (Tan Hwee Hwee, 2006) that are used in the WTC. However, with substantial subsidy, such a course is entirely advantageous for them.

4.2.2 Mandatory Restroom Grading System

Grading serves multiple purposes. In this case, it serves as an evaluation for the particular restroom to its owner and users. Also, grades motivate restroom owners to improve their utilities. This serves to solve the problems of foul odours and wet floors as identified in our survey (Figure 5), as both restroom owners and cleaners constantly work to improve restroom conditions and strive for a better grade.

² Refer to Appendix C for detailed scheme scope.

Currently, the “Happy Toilets” programme³ set up by the Restroom Association of Singapore (RAS) grades public restrooms on a three, four or five star rating. It is a joint effort by the National Environmental Agency (NEA) and the World Toilet Organisation. Restrooms with a rating above three stars will carry the “Happy Toilet” logo. Assessment is based on the tripartite aspects of provision and conditions, maintenance and comfort, special features and user-friendliness of the restroom (RAS, 2006). With a precise and strict criteria for grading, above-mentioned objectives can thus be fulfilled.

The “Happy Toilets” programme is a voluntary system for interested restroom owners. It is important to note that there are fees for grading, ranging from S\$60 - S\$80 (cost depends on the amount of restroom blocks graded each time) for each restroom assessed (RAS, 2006). Hence, only owners who are confident that their restrooms can achieve a good grade will apply for the programme because of the costs involved. However, it should be made compulsory for all hawker centre restrooms as it very much promises restrooms with better cleanliness and facilities.

The grading system can be made mandatory by collaborating with the NEA and there should be slight modifications to improve its effectiveness. More ratings (for restrooms below three star standard) should be included in the programme to provide restroom owners and users better understanding of the conditions. When a substandard grade is obtained (below three star), owners should improve on their restrooms for future re-assessment.

³ Refer to Appendix D for more information on the Happy Toilet Programme.

There are limitations to what the system can do. After grading, restroom owners may choose not to maintain or improve on their facilities. This applies to restrooms that obtain standard grades as well - restroom owners may be insouciant and make no effort in improving the standard of their facilities.

4.2.3 Restroom Etiquette Education

Mr Colin See, Executive Director of the Restroom Association (Singapore), (2006) stated in an interview, "We go from primary schools to secondary schools and teach them about toilet etiquette and to be more socially responsible". This shows the important role that education plays in the strive to improve conditions of public restrooms in our society. We propose to introduce three phases from the educational aspect - excursion, competitions and follow-up programmes into the existing educational programmes conducted by the RAS.

Excursions to the World Toilet College (WTC) can be planned to educate students about restroom etiquette and enable them to learn about the current technology in toilets. By doing so, students will be more involved in the learning process as they are able to watch the cleaners at work.

After which, competitions such as comic strips and posters design will be held for primary and secondary school students enabling them to put what they learnt at the excursion to good use.

Finally, there should be follow-up programmes conducted in schools involved to ensure that the students continue practicing good restroom etiquette. These follow-up programmes may include restroom ownership in schools, whereby a few classes take charge of restroom

cleanliness. Incentives for classes with the best restrooms will spur students on to maintain the cleanliness of the restroom as well.⁴

There have been ongoing efforts by the RAS such as the Happy Toilet School Education (HTSE) programme. It involves excursions to "Happy Toilets", assembly Talks, school toilet decoration activities and training of school staff and students to ensure the sustainability of the programme (RAS, 2006).⁵

We propose to integrate our three phases into the HTSE so as to add on to their different aspects of educating students. As the HTSE is conducted by the RAS, it would also provide us with a platform to conduct the introduced phases.

However, most students have a short attention span and some might not be interested in visiting the WTC. Also, education is not a solution that takes effect overnight, and it may even take a generation for the positive effects to be manifested. Nevertheless, education for restroom etiquette has to start somewhere.

⁴ Refer to Appendix E for detailed plan of the three phases.

⁵ Refer to Appendix F for more information on the HTSE.

4.3 Packaging and Implementation

As a summation of the solutions, we propose that the solutions follow this timeline (Figure 10):

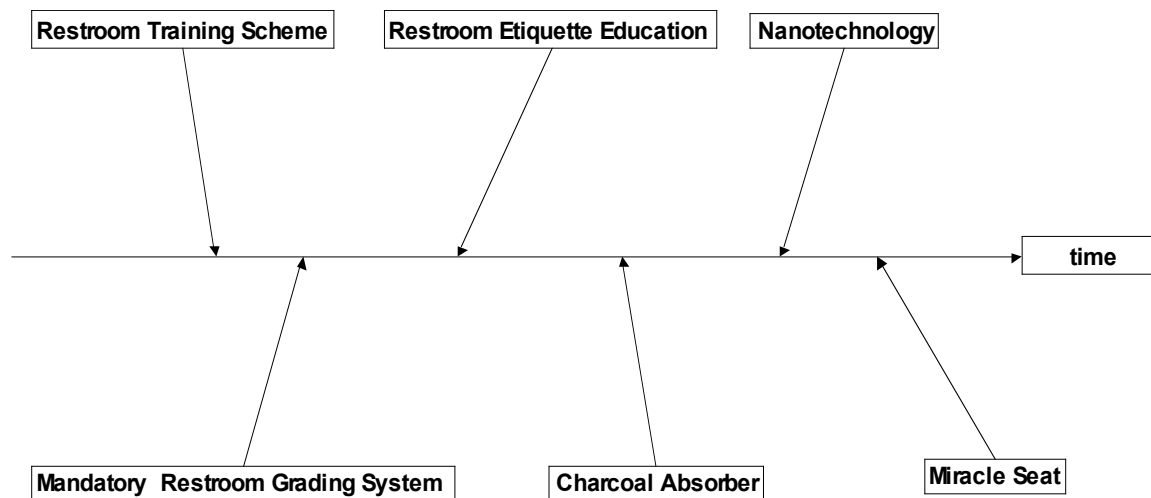


Figure 10: Implementation Timeline

The implementation can be split into short term and long term solutions. Short term solutions include charcoal smell absorbers, the Restroom Training Scheme, mandatory restroom grading system and Restroom Etiquette Education as they either have very easy setup or the society already has a similar system. Long term solutions include nanotechnology and miracle seats, which need time to implement as a major revamp of the particular restroom is required.

5. Conclusion

Our project has covered both technological and social aspects of maintaining the current momentum of hawker centre restrooms. Our proposed solutions deal critically with the crux of restroom problems as mentioned in Section 4 (Solutions). Though our project faces limitations of relatively high costs and negative public behaviour such as vandalism and abuse to restroom facilities, they can be partially overcome by appealing to the government for more grants and restroom campaigns in schools.

Not only has our project tackled the main problems faced by Singaporean restroom users in hawker centre restrooms today (e.g. foul odours, lack of cleanliness), it has also addressed and acknowledged past developments. This takes the state of comfort in public restrooms into a new dimension, elevating our status as a clean and green country. Hence, it can act as a good package to promote Singapore in the global village.

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7. Word of Thanks

We would like to thank:

Mdm Fadilah Mohamed, our supervising tutor, for the wholehearted guidance and care that she has always given us.

The Restroom Association (Singapore), for the immense support that it has rendered for our project.

Mr Colin See, Executive Director of Restroom Association (Singapore), for allowing us to conduct a very fruitful and insightful interview with him.

Ms Teresa Chua, Assistant Project Manager of Restroom, for assisting us in organising the interview and providing professional opinions on our project.

Survey respondents for giving us their honest opinions on local hawker centre restrooms.

Anyone else who has contributed to the project in one way or another.

We would also like to thank the following managements of hawker centre restrooms for allowing us to take photographs of their facilities:

- ▶ Ang Mo Kio Central Hawker Centre Block 724
- ▶ Ang Mo Kio Avenue 4 Hawker Centre Block 160
- ▶ Toa Payoh Lorong 7 Hawker Centre Block 22

8. Appendices

Appendix A: Survey Results

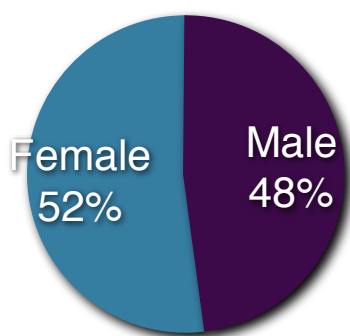
Total participants: 75

Survey Period: 13 June 2006 - 15 July 2006

1. Please specify your gender.

Question objective: To determine the gender of the person so that we can understand pertinent problems in toilets for each gender.

Results: 36 indicated 'Male' and 39 indicated 'Female'.



2. In overall how would you rate our local hawker centres' restrooms on a scale of 5? (5 being the best.)

Question objective: To find out how the public feels generally about the current conditions of restrooms.

Results:

- ▶ 15 people gave a grade of '1'.
- ▶ 30 people gave a grade of '2'.

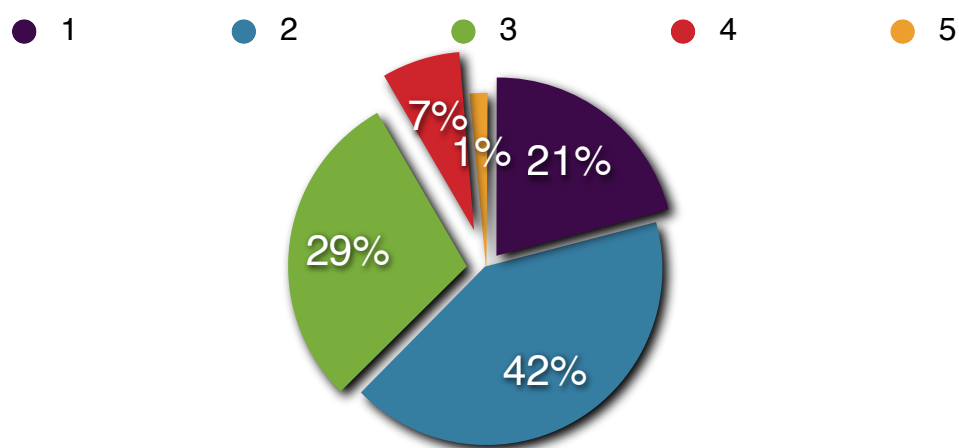
‣ 21 people gave a grade of '3'.

‣ 5 people gave a grade of '4'.

‣ 1 people gave a grade of '5'.

‣ 3 people skipped the question.

Inference: Most awarded 2 and 3 marks, indicating that they are only fairly satisfied with out current momentum. Much more must be done about this momentum.



3. Which are the most pestering problems in hawker centres' restrooms? (Please choose only 3)

Question objective: To find out which hawker centre restroom problems are pertinent to people in Singapore, and hence find a way to solve it.

Results:

‣ 66 people chose 'Foul odours' as one of their three choices.

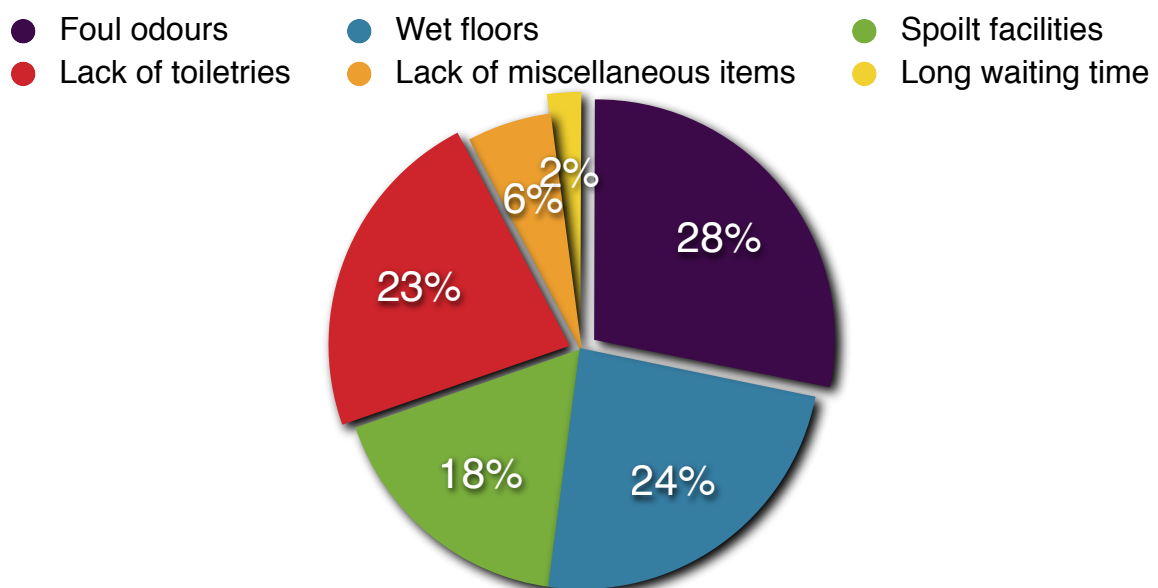
‣ 56 people chose 'Wet floors' as one of their three choices.

- 41 people chose 'Spoilt facilities' as one of their three choices.
- 53 people chose 'Lack of toiletries' as one of their three choices.
- 13 people chose 'Lack of miscellaneous items' as one of their three choices.
- 5 people chose 'Long waiting time' as one of their three choices.
- Other problems specified freely by our survey respondents are included in the table below.

No.	Free Response
1	dirty toiletries
2	dirty facilities
3	very filthy, lack of cleanliness
4	Lack of cleanliness

- 3 people skipped the question.

Inference: As seen from the diagram below, the most pertinent issues are the foul odours (28%), wet floors (24%), lack of toiletries (23%) and spoil facilities (18%). It reflects that much more can be done to alleviate these problems. Our solutions must hence aim to solve these 4 main issues.

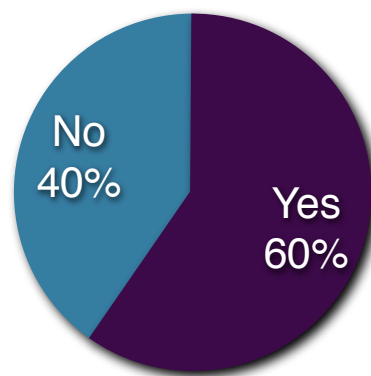


4. Are you aware of the current restroom campaigns that are promoting restroom cleanliness in hawker centres? (E.g. Chewonit comic strips, Happy Toilet Campaign, etc.)

Question objective: To find out how successful recent restroom campaigns have been in bringing awareness to the public.

Results: 43 people chose “Yes” and 29 people chose “No”. 3 people skipped the question.

Inference: There is still a significant portion of the people who took the survey that is not conscious of these restroom campaigns. When drawing up solutions that involve policy implementation, it must be noted that much more effort has to be placed into publication of the policy.



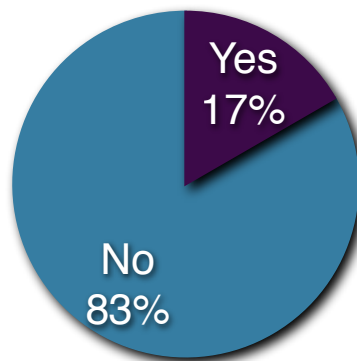
5. Do you find this/these campaign(s) useful? (If applicable)

Question objective: To determine if people, who have come across these campaigns, find such campaigns in improving hawker centre restroom problems.

Results: 9 people chose ‘Yes’ and 45 people chose ‘No’. 21 people skipped the question.

Inference: Most (81%) find that these restroom campaigns are not useful. This may be because that most people have very high expectations of a clean restroom and that current campaigns have not brought a critical improvement to the standards of hawker centre

restrooms. Thus, enhancing current policies and coming up with more holistic plan must be considered in the project.

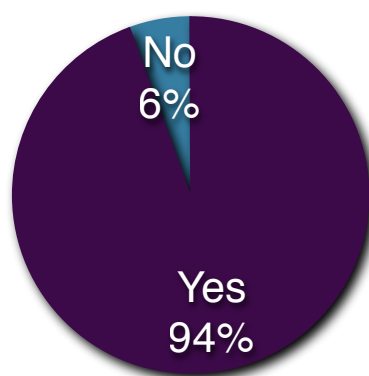


6. Will better maintained public restroom with better facilities encourage you to keep restrooms cleaner?

Question objective: To investigate if the implementation of more advanced restroom facilities will spur better restroom behaviours.

Results: 67 chose “Yes” and 4 chose “No”. 4 people skipped the question.

Inference: The implementation of state-of-the-art restroom facilities can indeed ensure that more users will keep the restrooms clean. Technological solutions that we are offering to maintain the momentum of hawker centre restroom development can maintain the cleanliness standard of a restroom as well.



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Closed	Survey on Restrooms in Local Hawker Centres [Alternate Link]	6/13/2006				10		
Closed	Survey on Restrooms in Local Hawker Centres	6/12/2006				65		

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Surveyed By: RJ140

Appendix B: Harmful Effects of Germs

According to various medical reports on the Miracle Seat website, germs in washrooms commonly cause influenza and other respiratory-related illnesses as well as diarrhoea. This hygiene problem is escalated by the fact that when a person uses the toilet bowl and flushes, water droplets are dispersed into the air due to the force of the flush system. The droplets can indeed travel up to 8 feet in the air, carrying along any germs onto the ceiling where the humid atmosphere of the restroom enables them to thrive and breed (Miracle Seat, 2003).

These germs can linger in the air for 2 hours, before settling on any nearby objects. Flush levers, exposed toilet paper, door handles, sinks and faucets are all high contamination areas of such germs. In fact, the germs can even land on clothing and live there for a period of days (Miracle Seat 2003).

Examples of these germs are:

- ▶ Fecal Coliform (commonly E.Coli, causes diarrhoea)
- ▶ Hepatitis A (causes liver disease)
- ▶ Norwalk Virus (causes vomiting and stomach flu)
- ▶ Salmonella (causes fever and food poisoning)

Appendix C: Course Scope for Restroom Training Scheme

The course scope for the restroom training scheme are split into three phases.

The restroom training scheme aims to equip restroom trainees with specialist skills such as high intensity periodic cleansing and maintenance of restrooms. The course will introduce new equipments, more effective means of cleansing, special techniques in cleaning silt and stains, facility maintenance and repair and quality customer service (Zee Yoong Kang and Jack Sim, 2006).

First Phase

Restroom trainees are required to attend the Restroom Specialist Training Course in the World Toilet College (Singapore Polytechnic). This particular course has gained favourable regard from the industry that includes the NEA, National Parks Board; contractors like Horsburg Cleaning, Campaign Cleaning, and Secro Guthrie; and property developers including Jurong Town Corporation and CBM. This course lasts 3 days (Zee Yoong Kang and Jack Sim, 2006).

Second Phase

The trainees are monitored for three months at their workplaces. They are required to incorporate on what they have learnt in the courses into the hawker centre restrooms. This ensures that the trainees put their newly acquired skills into practice (Zee Yoong Kang and Jack Sim, 2006).

Proposed Third Phase

We propose the implementation of the third phase into the course scope for the Restroom Training Scheme. Restrooms of graduated restroom specialists are subjected to spot checks by the NEA or relevant authorities to ensure that their restrooms are well-maintained. Employers of the restroom specialists will be informed for appropriate action to be taken if the restroom does not make the grade.

Appendix D: Happy Toilet Programme

Appendix D is adapted from the Happy Toilet Programme brochure, published by the Restroom Association (Singapore) in 2006.

Happy Toilet Programme (Miscellaneous Information)

When will the restroom registered be assessed?

Assessment will be conducted when the completed application form together with the appropriate fee payable to the RAS is accepted. Public restroom owners, who have participated in the programme, can request for a re-assessment of their restrooms if they have undergone upgrading. Assessing is done by qualified assessors.

Presentation of Award

A “Happy Toilet” plaque will be given to qualified public restroom owners for display at the entrance of the toilet. A certificate that is only valid for one year from the date of issuance will also be issued - this restroom facility will then be given publicity by the RAS as being of world class standard. However, an annual re-assessment is necessary for any restroom to maintain the “Happy Toilet” status.

In the Case of Damage and Abuse of Restroom

A platform is provided for the public to provide feedbacks of the restrooms to the RAS. If a “Happy Toilet” is reported as substandard, the case will be reviewed by the RAS. The award will be withdrawn when the restroom does not befit the status accorded before the one-year period ends.

Appendix E: Details of Phases in Restroom Etiquette Education

Excursion to the World Toilet College

Targeted Age Group : Primary and Secondary school students

Group Size: 3 to 4 classes with about 30 students each.

Learning Objectives:

- 1) To learn more about toilet etiquette (e.g. importance of flushing after use).
- 2) To acquire knowledge about how restrooms are cleaned and maintained by restroom specialists.
- 3) To have a first-hand experience themselves regarding how restroom specialists are trained.

Comic strip and/or Poster Design Competition

Targeted Age Group: Primary and Secondary school students

Group Size: Open to all students

Rules:

- 1) Only 1 submission is allowed per student.
- 2) Each submission has to focus on specific areas concerning cleaner restrooms or restroom etiquette.

Prizes:

Winning designs will be used in public restrooms and/or school restrooms. They could also be featured on the Restroom Association (Singapore) (RAS) website or brochures.

Objectives:

- 1) To enable students to put what they have learnt from the excursion to good use.
- 2) To instill in students a sense of responsibility over public restrooms.
- 3) To spur interest among students in such programmes.

Follow-up Programmes

Targeted Age Group: Primary and Secondary school students

Group Size: All Students involved

Brief Description: Students will be assigned to a particular restroom in their school and be responsible for keeping it clean and decorating the restrooms to add a personal touch.

Rationale: After the excursions and competitions, schools must continue to educate their students about cleanliness in restrooms as well as ensure that the right values are instilled in students. Thus, the follow-up programmes will be a phase that aims to encourage students to develop a sense of ownership towards restrooms.

Structure:

- ▶ Different classes will be assigned to school restrooms every fortnight.
- ▶ These classes will have to "personalise" their restrooms decorating them (e.g. small potted plants).
- ▶ Cleaning and washing of restrooms will be managed by school cleaners, but students will have to ensure that the cleanliness is maintained.

After each fortnight, the classes will have to clear the decoration and a debrief will be conducted by their form teacher.

The debrief will include points such as:

- 1) How the students felt about being responsible for the upkeep of their school restrooms.
- 2) How important students think restroom cleaners are in our society.
- 3) What improvements can be made to the restrooms so that students find it more comfortable (e.g. using bins with lid so that germs will not spread).

Learning Objectives:

- 1) Students will learn to appreciate restroom cleaners more and respect them as they grow older.
- 2) Students will feel a sense of ownership towards the restrooms even after their fortnight period has ended.
- 3) The school may want to implement feasible ideas for restroom improvement as suggested by the students.

Appendix F: Happy Toilet School Education (HTSE) Programme

Appendix F is adapted from the Happy Toilet School Education (HTSE) Programme brochure, published by the Restroom Association (Singapore) on 30 June 2006.

What is the Happy Toilet School Education (HTSE) Programme?

The HTSE programme is an ongoing fun educational initiative that is set out to achieve the following objectives:

1. Inculcate good toilet etiquette, personal hygiene habits and social responsibility in the students.
2. Raise the cleanliness standards and overall image of school toilets.
3. Support the 'Singapore's OK' programme for schools.

Supported by NEA, the HTSE has improved the cleanliness and users' behaviour in many schools. Since its official launch in July 2005, 94 out of 329 primary and secondary schools are actively involved in this fun and enriching programme. Many of which are repeating the programme for the second time.

Learning Objectives

In a fun and interactive manner, children will learn:

- ▶ Dirty toilets are not just smelly and unpleasant, but are germ-ridden and can cause them to fall sick.
- ▶ Clean toilets are the responsibility of users, not just cleaners; each user has a social responsibility in keeping the toilets clean.

► To keep the toilets clean and dry, everyone needs to be considerate and adopt good toilet habits such as washing hands with soap after visiting the toilets and flushing the toilets after use.

► How to wash their hands correctly.

After the programme, the students will act as Toilet Ambassadors, spreading the message of clean toilets to their relatives and friends.

How is the programme conducted?

This programme utilizes creative, interactive activities and hands-on participation for the students to create awareness of toilet-related health issues and to encourage active participation. With hands-on participation it is also a fun and interactive way to teach good habits and to inculcate social responsibility.

It is a two-pronged approach:

1. Capacity Building for Teachers to ensure Sustainability of Programme

Phase 1 - Training of Supervising Teachers/Students Leaders (1 hour)

2. Inculcating Social Responsibility & Toilet Etiquette in Students through Innovative, Hands-On activities.

Phase 2 - Let's Talk About "Loo-tiquette" (Assembly Talk: 20 - 30 mins)

Phase 3 - Loo Excursion (Happy Toilet Visit: 2.5 - 3 hours)

Phase 4 - "Light Up My Loo!" (School Toilet Decoration: 1 - 4 months, subject to scale and extent of decoration)

Phase 5 - “Loo, Attention!” (Toilet Audit)

Phase 6 - “Cheers to My Happy Toilet!” (Reward and Recognition)

Optional: Improving the Standards of Cleanliness in the School Toilets

Phase 7 - Training of Cleaning & Maintenance Staff

Phase 8 - Audit & reinforcement of Happy Toilet Standards. Upon request, for a fee, RAS can train and reinforce Happy Toilet standards for the toilet (i.e. facilities & cleaning staff).

The school toilets will be certified under the Happy Toilet Programme. At the end of Phase 8, the toilets will have Happy Toilet standards in cleanliness and maintenance.

Appendix G: Interview Transcript

Interviewer: Choong Yue Hao

Narrator: Colin See, Executive Director, Restroom Association (Singapore)

Date: 6 September 2006

Place: 438A Race Course Road, Singapore 218684

Persons Present:

Colin See, Executive Director, Restroom Association (Singapore)

Teresa Chua, Assistant Project Manager, Restroom Association (Singapore)

Choong Yue Hao, Interviewer

Chok Yi Da

Lin Zeyan

Tan Li Bing

Choong: What is the current state of hawker centre restrooms in Singapore?

See: I guess the government is trying to improve the current image of hawker centre restrooms in Singapore. If you go to the NEA (National Environment Agency) website, you can follow up on the Toilet's Upgrading Programme, which the NEA is going to use 450 million dollars and 10 to 15 years to upgrade all the hawker centres. So far, they have done (the upgrading for) 52 hawker centres and there are about 130 hawker centres in Singapore.

Choong: A side question - for the hawker centres, is there a criteria where any of them have a priority to be upgraded first?

See: Hmm, this one I don't know.

Choong: What do you think is the major obstacle that hinders such improvements of hawker centre restrooms?

See: 'Users' is one of them, and the maintenance. It's very easy to renovate the toilets but it's very hard to maintain the state of the cleanliness. This is what we are 'lacking' in hawker centres at the moment.

Lin: Is it because of a lack of funds to maintain the facilities?

See: Ignorance - because basically, 'ignorance' is not the best of systems. Currently, in the commercial world, the way they operate is on what kind of standards you want to raise. For them, they have a lot of trainers that are well-trained, but a lot of cleaners that are not well-trained. Secondly, the standards (of restrooms) are very spontaneous and basically there is no common standard in terms of upkeep.

Choong: You mentioned that the government has spent 450 million (dollars) on upgrading hawker centres. Are the funds sufficient?

See: Hmm, I don't know.

Choong: Between the government and the people, who plays the greater role in ensuring that such development (of standards of restrooms) continues to exist?

See: At this moment, the government is actually doing a competent job in upgrading it and in which of this, policies from other countries to upgrade the hardware. The quality of life is (evi-

dent) there. So, whether it's the people or the government, I guess they (government) do listen to the people to a certain extent, and they are developing what they have promised in the GE (General Elections).

Choong: The RAS (Restroom Association, Singapore) was established in 1998 to promote clean public toilets, how has the organisation managed to attain its goals?

See: We have organised our work into four areas to have a more inclusive approach in solving all these problems. Toilets in the first place affect everyone. First of all, (the aim is) to target at the public. From top-down, we are talking about the legislature, and the change of policies, down to toilet owners, cleaning contractors and ultimately, the users. Each has a programme to constantly remind them that to keep the toilets clean. So we have areas where we have dedicated programmes to serve the community, and we have what you call "outreach and education programmes". The community is basically (referring to) the user. For the general public, we have (events like) the Clean & Green week, which are grassroots activities. For "outreach and education", we have the school programmes. We go from primary schools to secondary schools and teach them about toilet etiquette and to be more socially responsible. "Standards and training" - we have toilet programmes which we set standards. Fourthly, we have research and development, where we do surveys on users' behaviours and to acquire better toilet designs and and recommend policy-changes. For example, the last policy-change happened in November last year, which the number of cubicles will increase in new toilets.

Choong: Is the Happy Toilet Programme successful?

See: To a certain extent, yes, if you are talking about hawker centres, yes it is. Currently all HUP (Hawker Centres Upgrading Programme) hawker centres that have been upgraded to have good toilet standards.

Choong: The government continuously upgrades such toilets. However, these are short-term solutions. Are there any long-term solutions which the government propose to combat such problems?

See: The current most tried-and-tested approach is the three 'P's. You have a tripartite of 'people', 'public' and 'private organisations' by playing their parts in not dirtying the toilets. We have grassroots organisations which guide people. This is not limited to toilets and works very well when pertaining to dengue, SARS and all the other issues they are emphasizing. We play the part of 'private (organisations)'. We'll provide knowledge and directions while the government comes in with policies.

Choong: As the restrooms are upgraded, is the criterion of the Happy Toilet Programme raised as well to incorporate the upgraded restrooms?

See: The Happy Toilet principle works in the sense that it does not have a set standard by us. The best toilets will be de facto Happy Toilets until someone comes in and raises the standard because that is the only way to be progressive. As the expectations of Singaporeans rise over the years.

Choong: In this case, the non-upgraded toilets will be struggling to cope with the new criteria?

See: No, not exactly struggling. They will embrace the new standards.

Interview Rationale

The interviewee, Mr Colin See, is the Executive Director of the Restroom Association (Singapore). He is involved avidly in the local restroom sector and is au fait with the current restroom developments, especially with regards to hawker centre restrooms.

The interview questions are crafted and carried out with the following objectives in mind.

We seek to obtain professional opinions about the current and past development of local hawker centre restrooms. Many of the programmes that are present in the current development (e.g. Happy Toilet Programme) of these restrooms are initiated by the Restroom Association (Singapore). This will be a first-hand account of someone who has “been there and done that”.

The Restroom Association (Singapore) has been largely successful in accomplishing its goals towards creating a “clean toilet” culture in Singapore through adopting a holistic approach to solve restroom problems. The interview aims to inquire on through what aspects they have adopted to make this approach effective. Then, we will be able to think of more practicable solutions through these aspects to maintain the momentum of development of local hawker centre restrooms.

The policy solutions that are thought up of in this project are related to a few of the programmes that the Restroom Association (Singapore) has in-line with their objective of creating a “clean toilet” culture throughout Singapore. In the interview, we will be able to evaluate these programmes and thus find viable solutions to their limitations from there onwards.