A Comparison of the Sewage Systems: Paris & Tokyo

Introduction

Fatbergs did not just arise this century in the UK. Indeed, fatbergs have been discovered in Ireland, Australia, Canada and more! After reading the literature and understanding that fatbergs are caused because of saponification, this chemical reaction triglycerides have with the calcium found under cities because of cement use, a quick assumption to make would be that all major cities with dense cement infrastructures would be victim to fatbergs. But we couldn't find any mediatic coverage of fatberg issues in cities such as Paris and Tokyo. We thus decided to ask directly their city halls to understand further how they can prevent the formation of any major blockages in their sewages.

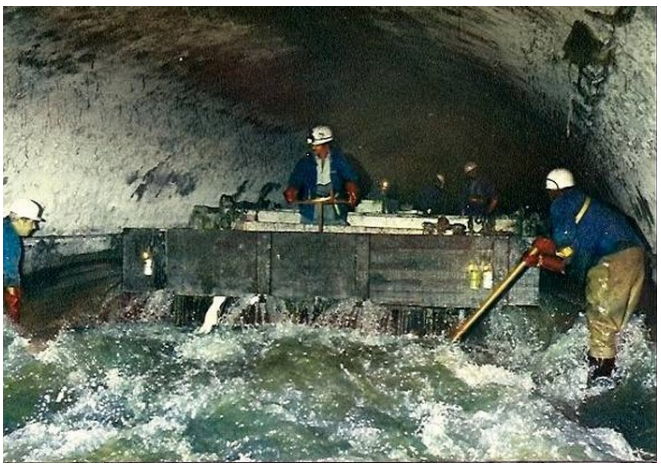
Paris

Paris' sewage system is one of a kind. Built in the middle of the XIXth century by Eugene Belgrand (and not updated since), they are sized such that humans can stand within the pipes. Visits of "*les égouts de Paris*" and it's museum is one of the many peculiar tourist attractions you can do in the French capital!

On one hand, it allows the transportation of wastewater (eventually containing wet-wipes and other solid waste susceptible to cause fatbergs), and on the other hand, rainwater in which the natural flow minimizes the probability of clusters forming.

Cleaning of the Parisian sewage system happens every ¾ month during 8 to 10 weeks thanks to the "*bateau-vanne*" on the main pipes of 115 km long. This atypical device is only used in Paris! The city has a total of 11 with each being 9.80metres long, 2.2metres wide and weighing 6tonnes. Even though they are massive devices, none of them are automated so the metre-by-metre progression is entirely done manually. When in use, 6 people are needed to constantly supervise it, and around 20 needed to move it.

Even though the "*bateaux-vanne*" are able to clean the Parisian sewers and free them from fatbergs, they require humongous amounts of human power and constant supervision. Moreover, working in the sewage is extremely dangerous for workers. Indeed, Francois Signoret says:" it's extremely dangerous for us. Rising waters can rapidly come when it's raining in the suburbs flood us. In 20minutes, the water can rise 1 metre". In a 2010 study, Parisian sewage workers have 17 years less of life expectancy from the average Frenchman and 7 years less than the average manual worker.



Tokyo

The Tokyo Bureau of sewage workstation General affairs division Public relations and service section's answer on how they deal with fatbergs is rooted in the Japanese culture. Indeed, in Japanese ancient times, human waste was being used in farms. Nothing was poured in rivers nor streets directly and they closely linked human waste to nature and the environment. But heavy rain and infectious disease were popular and -like various in countries of Europe and America- , people started emigrating more and more to cities in look for work. Because of this, the first sewage system in Japan was made in Tokyo in 1884.

When flushing toilet systems emerged in the 70s, Japan did not face any issue with wet wipes clusters because of contemporary government campaigns intertwined with their culture. However, there has been an increase of inflow of oil and fats in modern times mainly due to the manufacturing of leather goods and the diversification of food culture.

To tackle this, Tokyo achieves a high level of maintenance thanks to cameras placed in the sewage pipes to control the in and outflow. A guide on using waste oil and the implementations of grease traps in households further reduce the formation of fatbergs. The government also strongly recommends trash burning and they created a "water surface control device " using the hydraulic energy of waste water to greater purposes.

After a blob of fat was discovered on the seaside in 2001, Tokyo pledged to improve the water treatment system, not only for economic reasons but also for the protection of environment and the citizens' wellbeing and safety.

Metropolitan Area Outer Underground Discharge Channel

Japanese sewer system

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