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Conference Talk:

"Waste is much on the mind"
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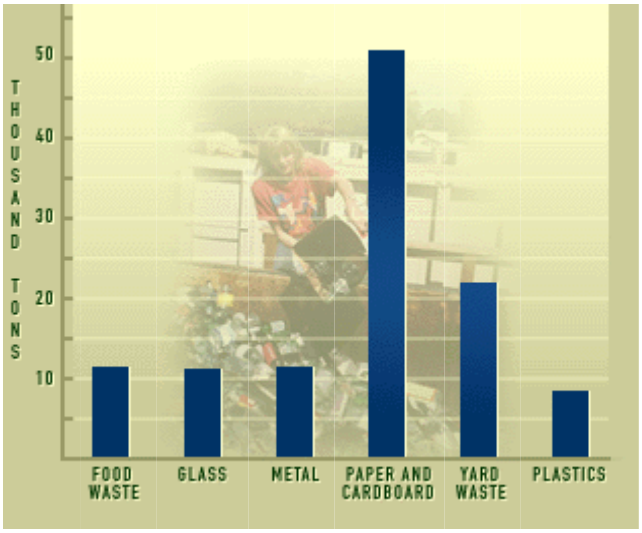
"Waste is much on the mind": This is because many of those wishing to live in cities demand a clean green urban environment in which the residents are at liberty to produce rubbish in unprecedented quantities while the City authorities are required to make all that detritus instantly invisible, through the nighttime labours of waste disposal crews.

Members of this audience may recognize this as a yuppie dream – what I shall refer to as the "dreamy view of rubbish" – it is wrong on several counts and I will return to make some points about that in due course.

The dreamy view of rubbish is a paradox. This is because city dwellers now produce greater quantities of more durable rubbish in more varieties and materials than ever before and, simultaneously demand that this waste cannot be seen or smelt by them as they go about their clean and stylish daily lives.



http://www.learner.org/exhibits/garbage/landfill/

To be positive, there is political leverage in this demand (no politician – local or national can afford to have the rubbish build up in the streets[1]) and wealth can be created from it. This is because many people (particularly the wealthy and the wealth generators) are unwilling to live in dirty cities – thus first world urban authorities wishing to retain or increase the desirability of their cities – as all progressive urban authorities must – have to clean up and lead "creative cities", as by world wide opinion uncreative citie4s are doomed. .

Rubbish piled in a park during a strike in Glasgow

Trash in the street of Johannesburg, 2002

[1] See for examples community reaction to the refuse collection strike action in Southwark London during July 2003 (http://www.london-se1.co.uk/news/view.php?ArtID=592).

Trash dumped by fly-tippers, Manchester, England

City authorities and other governments cannot clean up by themselves. Mercifully, we're well past the days when it was de rigueur (even acceptable) to simply dig a big hole (or use an estuary) near the edge of town and put everyone's rubbish into it as landfill.

Modern landfill operation at Waimanalo Gulch, the municipal sanitary landfill for the City & County of Honolulu; photographed on August 14, 2003 by Eric Guinther.

Instead of that we're in the age of smart solutions – and because they don't come free, wealth can be generated by those who are able to capture and use smart solutions to good effect. The rag and bone man of Victorian England, and I'll talk about him more soon, should have as his contemporary descendant the yacht–owning, man of means – who's kids attend only the best of schools and whose professional networks extend around the world – for some really good reasons I will identify in a moment

The rubbish man's wealth is the logical outcome of the fact that only s/he can provide one of the two essential services to 21st century city dwellers. Power and telecommunications infrastructure comprise one essential service. Rubbish and waste disposal is the other. The rubbish men who prosper will be those who adopt an entrepreneurial, science-wise approach to the development of profitable new technologies on a scale comparable to what is occurring now with the development of new power generation and IT technologies. Obviously, looking all around the world for best-possible new technologies will be an essential part of wealth generation in this industry.

Cities need wealth generating residents. There are never enough of them to go round. So cities compete for them. This competition used to be within nations, now its globalised. Simply stated wealth generators are unlikely to want to live in dirty first world cities. Streets must not to be littered. Rubbish must not accumulate. Green spaces must be clean, green and accessible. Rivers and other waterways within cities must not be polluted. Shorelines and harbours must be publicly accessible. It is interesting to assess New Zealand cities against these benchmark.

Think of the sums of money which have been spent, particularly in the second half of the twentieth century cleaning up great cities of the world[2]. Those are huge sums, and but a small fraction of what's spent annually on more routine, but potentially no less profitable, business of rubbish disposal.

The dreamy view of rubbish, which I mentioned earlier, is relatively new. Many of the great cities of the world were genuinely filthy and prone to outbreaks of contagious diseases (like the cholera epidemics which swept London in the 1830's) until recently. Squalor has always been concentrated more in some parts of town than others, but decaying rubbish and all that it brings to town was voluminous and conspicuous enough to make early modern and modern cities radically different from most preferred contemporary cities.

What kept the rubbish at bay in British cities through the nineteenth century was poverty - specifically the presence of large numbers of people so poor that they had to scavenge in order to stay alive.

Let me offer an example. Victorian London was occupied by some pretty colourful characters, including:

- those who lived by dragging corpses from the Thames to retrieve cash, clothes, hair and other valuables.

- **Bedesmen** were very poor people who said their beads – i.e,, they prayed for the rich who'd endowed a chapel or almshouse for their support.

- **Costermongers** sold fruit and vegetables in the street – there were 12,000 of them in London during the 1830's

- **Mudlarks,** mostly children, who survived off what they could scrounge from the banks and bottom of the river, especially lumps of coal and pieces of iron.

- **Childstrippers** worked the streets as gangs, to steal the clothes of better off children, again for sale.

[2] For instance, in 2004 water authorities were authorised recently to raise water levies 2005-2010 to an extent which will create a fund of 2.7 billion pounds for a range of environmental and investment projects http://www.timesonline.co.uk/article/0,,2087-1291122,00.html
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- **Cheapjacks** were street peddlers of cheap metal items – knives and the like

- **Street arabs** – those many children who lived rough on the street, having no homes to go to.

Londoner's, like occupants of all European cities which had been struck by the Plague, feared rats. Being a **ratcatcher** was a good occupation for a lower class boy who liked a bit of adventure. Rats were ubiquitous due to inadequate sewers, and the presence of granaries and stables filled with straw, manure and oats for horses, and they were (rightly) understood to spread contagious diseases. Ratcatchers used arsenic as a poison, ferrets to clear rats out of their holes and terriers to catch them. Our grandpartents knew of ratcatchers.

The intensity of the scavenging was such that anything which could be reused was traded. A lot of materials were recycled, though the form of this activity might strike us as novel..

- A lady when finished with a gown might pass it on to a maid who would wear it with pride.

- Ratbags, were just that, sacks kept as a perquisite by some of the more senior members of a household in which small, discarded pieces of disused cloth could be stored, prior to sale to the ragman, rag and bone man, or the rag and bottle man.

- "Sewerhunters" did what the term implies

- Linen rags were sold to paper manufacturers for that use.

- Used tea leaves were sold, artificially coloured and resold, often having been stolen by servants in better off households.

- Drippings was collected by cooks as a perquisite and sold as a substitute for butter.

- Bones were sold to the rag and bone man, then to be ground up, sold on for use as fertilizer (prior to the development of artificial fertilizers which revolutionized British agriculture in mid-Victorian times).

- Household ashes and dust were sifted to extract anything of value, then sold for brick making and manure.

- Soot was collected by chimney sweeps, turned into manure and insect killer and sold as such.

- Public areas were scavenged for cigar butts, this is prior to the common use of cigarettes.

- Dog dung was collected off the streets, sold to tanyards where it was used in processing the leather to make kid gloves worn by the well-off to opera and other elite social occasions.

Those, very many people who lived by scavenging did so out of necessity. They were desperately poor, predestined to their difficult lives by the social class system, and the absence of education and other mechanisms of upward social mobility. Their only option was the poorhouse; miserable, publicly funded institutions for the destitute.

Three factors underpinned the system by which scavenging was the principal means of rubbish management:

- First an entrenched social hierarchy which allocated people to life long roles akin to those found in a caste system
- Second the Victorian love of thrift and their loathing of waste.
- Third, the fact that a very high proportion of waste was organic – prior to the Industrial Revolution particularly, then even later, really until the invention of plastics following the industrialization of petroleum which first occurred in the 1860's and a huge increase in the manufacture and use of alloy metals – steel, brass and tin, which occurred after *c.* 1840

It's salutatory to note that the system by which scavenging was the principal means of rubbish disposal in British cities was known to our direct and non-too-distant forebears, as it ended in the third quarter of the nineteenth century – by which time the population of New Zealand included over 400,000 Europeans, most of whom were British [3].

But mid-nineteenth century Britain was faced unprecedented problems, and powerful forces combined to improve the situation. There were about 9 million people in England and Wales, by 1801[4]. Most arable land was enclosed. Market villages declined in numbers (from 900). Mining and textiles villages were new centers of population as those industries developed on a small scale at first, then gave way as centres of population to a few great cities, industrial and mercantile port cities (Manchester, Liverpool, Bristol, Glasgow, Edinburgh and London). Within those cities living conditions were awful for many. Factories and steam engines were built and used throughout Britain. Air pollution

[3] From: "Increase in European Population, 1851-1961", p.823Vol.2, *An Encyclopedia of New Zealand,* A.H. McLintock(ed.), Government Printer, Wellington.

[4] From DV Glass, "Population and Population Movements in England and Wales, 1700 to 1850", in Glass and DEC Eversley, *Population in History*, Edward Arnold, London, p.240)

became a signature feature of new British industrialism . Factories were immortalized in William Blake's poetic phrase as "dark, satanic mills".

Then governments, fearing social revolution as had occurred in France, were persuaded to relieve poverty, improve conditions of work, set wages by law, allow unions, pave the streets, get the sewerage out of the gutters, and begin the provision of public education and something approximating a health system. A degree of social planning, alleviated poverty and improved the life of the City. Emigration reduced population, especially among the poor. Labour intensive industries provided work and regular incomes

The great markets in London, including Smithfield, Billingsgate, and Covent Garden, established after the 11th century, expanded, benefiting from improved means of transport they resulted in improved public nutrition as quantities of fresh produce entering the great City came to better match the needs of the population.

Most of those changes occurred in eighty years after 1830, though progress was delayed and punctuated by various forms of social and political brutality.

Whatever the details of the matter, the fact is that waste management became an industry for the first time in that period. Initially, it was entirely the work of the public authorities. They tired of it and soon passed the burden of work, under commercial contracts, to private enterprise.

- The Victorian social hierarchy weakened – and the nouveau riche distinguished themselves by their lavish consumption of food and profligate use wealth and commodities. of social hierarchy which allocated people to life long roles akin to those found in a caste system
- The Victorian love of thrift and loathing of waste were superseded as the British entered the Age of Consumerism
- Waste changed: whereas formerly most was organic; the minority was durable and volumes per person were low – under Consumerism, volumes escalated furiously, and (critically) for the first time durable waste became the majority of debris by volume (especially after glass became a domestic and public consumable) and organic debris declined in proportion.

Fastforward a mere 150 years from late Victorian England to present day North American. Waste production per person is out of control. Growth in volume has been enormous since 1950. see http://www.findarticles.com/p/articles/mi_m1282/is_n23_v49/ai_20088589)

The range of categories of daily discarded rubbish is proliferating, and the proportion of toxic waste categories is expanding disproportionately.

The Victorian ethic of recycling.reusing everything in which there was an conceivable reuse value is long gone. Bill Rathje, the world pre-eminent archaeologist of rubbish has

established the volume, proportion and cash value of re-useable materials discarded daily from homes in North America.

His conclusions are staggering: broadly speaking 40% of what is discarded has not been used at all, although bought new and not long before being discarded. Almost everything discarded has further potential use-life. This suggests that American consumerism has developed to the point at which purchasing stuff is the desireable activity; using the stuff is much less important, and discarding it is not a social, sharing activity. Very often destroying or burying waste is necessary to continued economic growth, as recycling limits demand for new items.

We're aware now, of course, that the volumes of used clothes being sold into Africa from North America and Europe has destroyed all but a very small remnant of the African apparel industry.

This remarkable situation collides with the history of waste disposal: at first raw waste was tipped into rivers, burnt or buried in holes in the ground.

At a second stage in the development of waste disposal, waste management was invented, wherein the purpose is to manage disposal so it has small possible ongoing impact – ecological, scenic, or toxic and so, simultaneously, useful goods and material s are removed from the economy so fuelling demand for new product/s..

Globally, most waste disposal is currently operating between the first and second stages.

In a third stage, waste management is refined to the point at which rubbish is separated into components, disposed of permanently, economically and without either large volume demands, or long-lasting toxicity.

Despite all the hype, only a very small proportion of the total global volume of rubbish is disposed of currently at anything approximating the third stage of waste management. The reason is that while 3rd stage waste disposal is desirable, the economics don't yet make sense. It's plainly cheaper to bury and burn than to reprocess components – even plastics, even paper, even steel, and more valuable metals. In general, productive industries particularly those specializing in low-medium cost daily household items, hate both long term use and recycling of made items and raw materials.

What's the future you might ask – that's easy to see, it's being created now in the largest, richest and most aesthetically-minded cities on Earth – take Paris for instance – vividly aware of its history of self-pollution (http://www.translucency.com/frede/parisproject/), it is hosting the December 2005 International Exhibition of Environmental Equipment, Technology and Services for Industry and Local Authorities, aka POLLUTEC (http://www.eventseye.com/fairs/trade_fair_event).

An entrepreneurial waste business leader here would profitably consider going to such meetings – in the richest and most environmentally conscious cities on Earth, there to see

the future of waste disposal new technologies under development, and then to consider how they might be usefully applied here

Fortunes remain to be made by those who can successfully solve the riddle: how to dispose of New Zealand's waste in ways which make our cities and landscape more attractive, at low real net cost. New technologies may provide part of the answer.

Accordingly, I suggest conference participants go to Paris and comparable world symposia on waste management, identify technologies on show there which are likely to be useful and profitable here, transfer them to New Zealand and make your well-deserved fortunes.

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