

# 353

AMQ  
International's

# STRATEGIC ASSET MANAGEMENT



October 29, 2012

**Are large 'scary'  
numbers really scary  
anymore?**

For over three decades now we have been talking about the looming financial burden of infrastructure renewal - the story started, as far as I can tell, with the US publication "Crumbling Academe" and similar stories of the problems of university renewal in the early 1980s. Now, every year, successive infrastructure report cards cite larger and larger figures for the 'infrastructure deficit' (the cost of renewing infrastructure and bringing substandard provision up to an acceptable level). Originally the figures were in the billions, now they are reported in the trillions. (How soon before we hit the quadrillions and quintillions?)

Some action has been taken, but most of us believe it is not enough - yet, although 30 years have now elapsed since we have been measuring renewal and warning decision-makers, the sky has not yet fallen in!

Which raises at least two questions

- (1) Have we perhaps overstated the problem?**
- (2) Are politicians and decision makers now 'tuning out' our message?**

If you believe that the first answer is NO, but the second answer is YES, then perhaps we need a different way of presenting our message.

In this issue, I suggest an alternative approach to measuring sustainability (pp 2-6) and look at how we can know asset life information, particularly for buildings (pp 7-8). Finally, we present some practical examples of collaboration and advanced AM activity.

*Please consider - and enjoy!*  
*Penny*

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## How Big is a Billion?

When the South Australian Public Accounts Committee presented the results of the first study into the looming costs of asset renewal to the press in 1986, I found the reporter for "The Advertiser", Adelaide's only daily paper, wandering lost and dazed in the bewildering corridors under Parliament House. As I guided her back to the lift, she kept muttering, "He was talking about billions of dollars! I don't understand billions!"

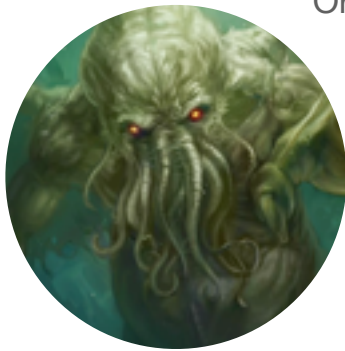
We can take this as a poor reflection on the quality of reporting from the local Murdoch press - or, more charitably, and probably more accurately, we can recognise that few of us, if pressed, can really appreciate what figures really mean when they reach stratospheric levels.

Billions ???!



## Are Large, 'Scary', Numbers, really scary any more?

Or is this the way that our Scary Renewal Messages are now being seen?



If so,

Perhaps it is time to try something different -



## An Alternative Way of Presenting the Sustainability Message:

Not 'how big are the dollars?' but rather 'what adjustments will be involved?'

### A 4 step calculation

1. What is the Total Replacement Cost of your Renewable Assets?
2. How much do you need to **provide for renewal** each year, **on average**, if you are to be sustainable?
3. What is this figure as a proportion of your (cash) revenues/ income
4. **What is this figure as a proportion of your uncommitted (cash) revenues/ income?**

# SUSTAINABILITY - A 4 STEP CALCULATION



## What is the Total Replacement Value of your different renewable asset categories?

If you have well developed asset management plans, this information will be readily available. If not, then you will need to resort to your balance sheet information.

**WARNING !:** For the purposes of sustainability, we are only interested in renewable assets, so if you are using your balance sheet figures, first **remove** those assets classes that are not renewable - e.g. LAND and FINANCIAL ASSETS



**WARNING 2:** The asset values in your balance sheet are probably written down, depreciated, or 'market' values. For the purposes of sustainability we need to know the TOTAL replacement cost, not the depreciated value. You will therefore need to adjust these figures upward. Ideally, you would adjust each asset category separately. So, if you estimate the average age of an asset category to be 70% of its useful life (i.e. you consider it to be 30% depreciated) then multiply the written down value by 100/70.



**Helpful Hint:** *If you do not have better information,* and you are using the depreciated figures in your balance sheet to estimate Total Replacement Value, then for your 'first cut' measure of sustainability, assume that your assets are somewhere between 60 to 80% 'used up'. For asset categories that have long lives (60 years plus) err on the lower end of the range, for shorter lived assets, err on the higher end of the range.



In both cases, if you don't know the total replacement values of your assets, and their age distributions, then these are issues that you will want to include in your Asset Management Improvement Program.

*So now, armed with the total replacement values for your various asset categories, the next step is to determine*



**The rate at which your assets wearing out overall - It may be faster than you think.**

Using the appropriate economic lives for each asset category, divide the total replaceable value of the category by its economic life to find how much you would need to spend, on average, to renew that asset category. Now add the renewal costs for each category and divide by the total replaceable cost of the portfolio.

**Warning 1:** Don't assume that because most of your assets are long lived, that your average portfolio life will be just as long - because it won't be. Consider the following example.



It is easy for non-asset managers to think that if the bulk of the assets are long living, with a low rate of annual consumption, then the portfolio average must be

<b>CALCULATING THE ANNUAL RENEWAL COST AND THE RATE OF ANNUAL CONSUMPTION</b>				
<b>Asset portfolio</b>	<b>Total Replacement Cost \$M</b>	<b>Useful life Yrs</b>	<b>Average Renewal Cost \$</b>	<b>Rate of Annual Consumption %</b>
Asset class A	10	60	166,667	<b>1.67</b>
Asset class B	5	30	166,667	3.34
Asset class C	2	10	200,000	10.00
Asset class D	1	5	200,000	20.00
<b>Total Portfolio</b>	<b>18</b>	<b>24.5</b>	<b>733,334</b>	<b>4.07</b>

close to that. In this case, 55% of the assets are long living assets with a rate of annual consumption of only 1.67%. Another 28% have an annual rate of consumption of 3.34%. That is, over **80%** of the assets have rates of consumption under 3.5% - and YET, the average for the entire is over 4%! How can this be?

This is the magnifying effect of the short lived asset class. These assets are replaced many times in the space of time it takes to replace the longer living assets just once.

**Warning 2:** Whatever your Average Portfolio Life is NOW, it is becoming shorter all the time, with demand and technology changes. Newer assets tend to have more short lived components. Be aware of this in your extrapolations.



**Helpful Hint:** *if you do not have better estimates to guide you -*



For a 'first cut' exercise, start with an average life of 50 years (i.e. assume your portfolio is wearing out at the rate of about 2%)

Again, if this is an unknown for you, it is something you will want to include in your AM improvement program.



### What are your renewal costs as a proportion of revenues?

OK, we now have estimates of annual renewal costs.

Note: this is NOT the renewal *expenditure* expected in the next 3,5 or 10 years (the figures that you would get from your asset renewal forecasts) but the average long term *cost* - the amount that you need to 'provide' each year to sustain your current assets. Some years you will

be spending more, some less, but if you have calculated your long term average correctly, the unders will compensate for the overs.

### What revenue figures should you use?

Choose operating revenues. Do not include such things as borrowings. Also make sure that you exclude contributed assets. Even if some accounting regimes regard these as revenues, they are of no use in providing scope for the renewal of existing portfolios (quite the reverse!) so leave them out of your calculations.

### What should your results look like?

Using asset values for South Australian Councils (minus land and financial investments) and adjusting for depreciation by multiplying through by a factor of 100/65 applied to all renewable assets (STEP 1) and using the default 2% asset consumption figure yielded a range of Average Renewal Cost: Operating Revenues of between 12% and 42%.

### One more step to go! But this is the CRITICAL one!



Since financial sustainability means being able to continue on doing what you are doing now without major adjustments (rate hikes, lowering of service), we now move to the final step.

**Repeat Step 3 but this time express it as a proportion of the 'non-committed' revenues.** That is omit the revenues that you have committed to full time salaries and wages, to legal obligations, to debt repayment and interest, etc.

### **Now, how sustainable are you *really*?**

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#### **Footnote: A Word about Benefit: Cost Analysis**

There was a time when an election meant a new dam or power station. In the early 1980s we suffered from extensive and expensive surplus capacity in most areas of infrastructure. Today we are more likely to complain of an insufficiency.

Utilities are now commercialised, corporatised or otherwise regulated and excess or deficient capacity is carefully monitored. Roads and Buildings, however, are another matter. These are often justified by benefit:cost analyses that look fine on paper but are not verified by community involvement.

Having gone through the 4 step sustainability analysis above, you will want to carefully analyse all new assets for their impact on your long term sustainability.

**Consider:** Every \$100,000 spent on assets will generally involve: about

- About 5% (or more) on interest on the loan to fund it (or sacrifice of the interest that could otherwise be earned if you are using your own reserves)
- Between 1-2% on maintenance, cleaning, security, lighting, administration etc.
- Between 2- 5% on annual renewal provision for sustainability, and
- Depending on the type of asset, anywhere from 1% to 5% (or more) for operating

**Or between 9% to 17% in additional costs.**

**The Question you need to answer is:**

**Will your revenues increase to match these costs?**

Regardless of what your 'on paper' Benefit Cost study tells you, unless your costs can be recovered by an increase in revenues (cash) OR by a willingness of the beneficiaries to pay higher rates or charges or by government grants (cash) where the community at large is considered the beneficiary, *then the Benefits are fictional!*

## **HOW DO WE KNOW WHAT WE KNOW?**

### **: ASSETS THAT DON'T LAST THE DISTANCE**



I was having a chat with a colleague the other day and during the conversation he mentioned the case of building that was coming up for its third renovation in just 20 years. It made me wonder why - and how extensive this problem might be.

### **Does anyone have experience with a similar problem of either assets or renovations that don't last the distance?**

A lot of attention is paid to 're-valuation' - adjusting our value expectations as the world changes. But how much attention do we pay to 're-living' - adjusting our useful life expectations as the world changes. WHAT do we really know about asset lives, HOW do we know these things, and HOW do we build this knowledge into future estimates and decisions?

*I am not referring here to 're-living' in the sense of taking action to modify, change or renew an asset, thus giving it 'another life', but rather questioning what we know about asset lives and how we know them - particularly for buildings.*

### **Many Questions arose for me**

Whilst all of these questions are specific to the instance raised, they also raise more general questions about the cause of change and how much it can be foreseen, about timing, forecasting, wastage and options.

## 1. CAUSE

What was it on each of these occasions that changed their expectations of a 20 year life: - was there anything common to all three occasions? - were the causes completely unforeseeable (an act of God?) - or, foreseeable but happened much more quickly than they were expecting, - or, foreseeable but what was foreseen was one of many possibilities and there was no way to choose between any of them. Were the changes driven by external events? Or were they a function of a change of mind on the part of the administration? Did the need reflect a lack of co-ordination between faculty and facility? Or was it something else entirely.

## 2. TIMING

Since it takes time to organise a refurbishment and there is a natural reluctance to engage in one because of the expense and the disruption, I figure that problems must already have shown themselves as early as 4 or 5 years, perhaps earlier. So how soon were the problems that gave rise to each refurbishment recognised?

## 3. FORECASTING

What are the implications of what you have discovered for our ability to foresee any period into the future? - What techniques of future demand analysis were used at each stage? Did they just correct for already evident problems or did they try to anticipate future changes? If so, how? Did they use extrapolation? Did they use scenario planning? And what does this say about our ability to design even brand new buildings like the new Royal Adelaide?

## 4. WASTAGE

What did they do, with a 20 year life in mind, that turned out to be a waste of expenditure? - If nothing, was the 20 year expectation perhaps a gambit to increase their chance of getting funds that would not have been agreed if there was only a 7year life expectation? If something, what were the actions that were taken that turned out to be ineffective?

## 5. OPTIONS

Would they have been better off, designing for 7 years in the first place? If not, why not?

**Are you a specialist in Building Asset Management? I would be happy to publish answers, comments, thoughts or opinions on the above questions**

## THINGS THAT WORK!

In the last issue (SAM 352) we looked at AM - what we did (the Activity Vector) and Who we did it with (the Collaboration Ladder). Here are some case examples to learn from, with thanks to **Geoff Hales** of Barnewall Resources Pty Ltd and **Peter Savage** of CT Management Group.



**LISTEN TO YOUR COMMUNITY** In a council region in far north Qld, there was a gravel access road, that the Council endeavoured to regularly grade, particularly after wet weather. Locals advised that reliable access after and during wet weather was more important to them than smooth roads, so they would prefer culverts to be installed at certain waterway crossings rather than regular grading of the road. So the culverts were installed, the frequency of road grading was reduced to cover the cost of the culverts, and the road users needs were more satisfactorily met.



**OBSERVE AND ANALYSE** A regional council in Queensland reviewed usage rates of plant such as trucks, tractors and mowers, made changes and achieved significant financial savings.

For example - **Park mowing**. With the crew sizes, the annual usage figures of the mowers were much lower than we had expected. What we discovered with a 3 person crew was that the mower was unloaded from the trailer and set to work mowing while the other two attended to litter collection, line trimming and the like. About halfway through their time at the park, the mower was back on the trailer and the mower operator joined the other two in their duties. By adding a fourth person to the crew, the line trimming and other activities finished about the same time as the mowing. This meant that we could move the crew on to the next park and had much greater use of the mower during the day, and consequently we needed less mowers, trailers and trucks.



**DESK TOP ANALYSES.** Don't underestimate the value of desk top analyses. They can help to pinpoint areas for further analysis and save time and resources on 'on the ground' assessment. In the case of one water company a desk top analysis utilising data on age, economic life, criticality and risk management enabled the team to identify a major problem with a trunk sewer - in time to take a lower cost relining option.

Had the study not identified this as needing urgent condition analysis, deterioration of the sewer could have resulted in a much more expensive rehabilitation technique.



**SHARED SERVICES** One Queensland council, is saving money by using the bitumen sealing team from another council and making money by selling the services of its own bridge maintenance crew. Both crews get more work and more satisfaction enabling councils to attract - and retain - better quality labour resources.



And here in the spirit of collaboration, is the City of Townsville's Asset Management Framework, which has been approved and used by council and has been shared with us by Vivek Kangesu.

**Community Services | Council Vision | Corporate Plan**

**Townsville City Strategic Planning Framework**

