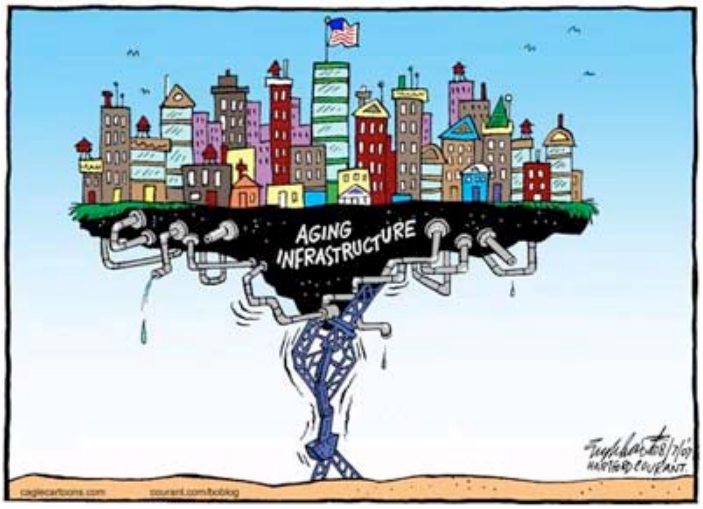
Issue 309 February 7 2011

AMQ INTERNATIONAL
STRATEGIC ASSET MANAGEMENT

THE INFRASTRUCTURE DEFICIT



Time for a Change?

Every developed country is now facing the same problem - ageing assets in need of renewal and new infrastructure to meet the demands of increasing and changing populations. We have talked about this now for several decades. But talk won't do it.

And doing what we have always done in terms of infrastructure - and then scrambling for the funds - won't do it either. We simply do not have enough money to solve all our problems this way. And do not be fooled. It is not only infrastructure that is facing this deficit problem.

At a recent SA Health Planning Meeting, the Minister reported that with the ageing of the population and other health problems, within 20 years we would need to spend the entire state budget on health alone! Clearly this is not a viable solution. (And it is likely that a similar planning meeting with Justice, Education, and any other portfolio would yield the same response.)

The point is we do not have the funding - in health, in infrastructure, indeed, in any area of our lives, - to continue the way we have been living. That is what being unsustainable means! And the problem is not 50 years away, or 40 or 30 but much closer than we have thought. There are really only two choices:

We can make changes ourselves
Or we can have change forced upon us!

This is what I look at in this issue.

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View from the Coffee Shop - Canada

If you have been impressed with the lake view from my Mawson Lakes Coffee Shop, what about this view of an ice rink taken a few years ago in an Edmonton Shopping Mall, Canada - surrounded by no less than 7 coffee shops!

Time for a Change!

When was the last time you went to a Conference and it fundamentally changed the way you thought?

That happened to me at the first National Infrastructure Summit in Regina, Saskatchewan just over a week ago.

I have always had faith that good asset management could solve the Renewal Gap or Infrastructure Deficit problem. *I no longer do*.

I clung to the notion that working to achieve appropriate, affordable, service levels; disposing of assets that no longer provide value for money; increasing utilisation to avoid having to increase the asset stock; and extending asset life by well chosen maintenance would reduce the size of the problem to a level that we could afford. *I no longer do.*

Whilst essential, it is now clear to me that good asset management, *is simply not enough.*

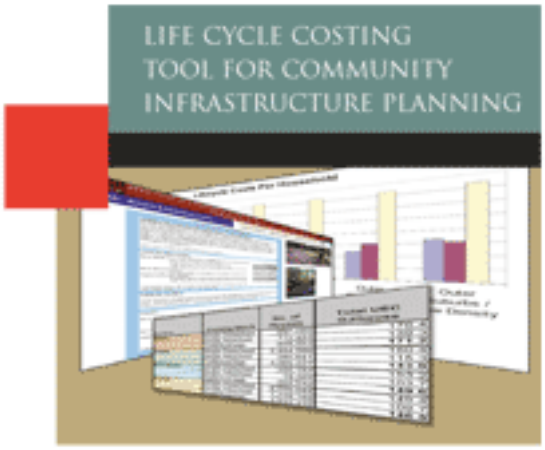
I believe that we have been looking at the problem of renewal - the infrastructure deficit - from the wrong angle.

And while we speak of this being a multi-disciplinary issue, we have been far too narrow in our definition of which disciplines to include.

Have a look at the following articles. And if you have an opinion - *and Please have an opinion!* - write to me at penny@amqi.com

Penny

Ideas build on each other! My train of thought for this issue started off at a Workshop organised by the Asset Management Group in British Columbia. This is a very active group with a great website. Worth a visit at http://www.assetmanagementbc.ca/



Life Cycle Costs and *Life Cycle Revenues!*

A conversation with Frank Blues, Prince George City Council in British Colombia, alerted me to the idea of measuring not only the life cycle costs of new developments (and by extension all infrastructure) but *also the life cycle revenues.*

> **First Thought:** Within Asset Management we speak of the costs of infrastructure, but seldom give equal attention to the revenues. No wonder we are facing problems of financial sustainability!

followed closely by

> **Second Thought:** I started to toy with the idea of evaluating new developments according to how financially self-sustainable they were. *Perhaps if new developments were only accepted when they could demonstrate that their life cycle costs would be covered by life cycle revenues or if the local community voted to subsidise the new development through increased rates, there would then be more encouragement to design sustainable developments?*

Frank told me about the 'life cycle costing tool for community infrastructure planning' which comes in the form of an excel chart with a set of scenarios representing different housing densities that can be customised for local conditions and a very useful users guide.

You can access both for free, at http://www.cmhc-schl.gc.ca/en/inpr/su/sucopl/licycoto/

> The tool description says "In order to properly evaluate the life cycle costs of a new development, it is necessary to apply the per unit costs and life cycles applicable to area. The Life Cycle Costing Tool for Community Infrastructure Planning (the Tool) was created to allow a user to estimate the major costs of community development, particularly those that change with different forms of development (for example, linear infrastructure), and to compare alternative development scenarios. The Tool is geared towards estimating planning level costs and revenues associated with the residential

component of a development, although financial impacts of commercial and other types of development can be incorporated provided that infrastructure requirements are specified correctly. The Tool is well suited to assessing development projects ranging in size from a collection of houses to a block-by-block infill development to an entire subdivision. A good measure of the applicability of the Tool to a given project is **whether or not alternatives can be conceived that would result in significantly different densities or infrastructure requirements, or make use of different green infrastructure alternatives."**

Studying the Life Cycle Costing Tool led to

> **Third Thought:** *How many asset managers get involved in evaluating the life cycle costs of new planned developments?* If we don't get involved at this up front stage, we have no opportunity to shape future life cycle costs. And we all know that life cycle costs are most easily and effectively managed at the conception and design stage.

I figured that even if developers present only one design option, comparisons could be made with other developments that have already occurred in council. It reminded me of a new housing development heavily promoted by our state government in South Australia. A feature of the development was extensive public garden plantations, beautiful verges and traffic island plantings. The developer offered to maintain the gardens for ten years (approximately the time needed to sell all the housing allotments) after which the responsibility passed to the council. The council had not taken into account the extensive watering and garden care costs that this would entail - *and they had not been factored into the rates set.* In other words, life cycle costs were not met by life cycle revenues. The upshot was (1) a serious scaling back of the garden amenity that had been a major reason for homeowners buying into the area in the first place and (2) subsidies from other areas of the council for this particular development. This provoked the following:

> **Fourth Thought:** *How many developers present more than one design option? And where they don't, can other local developmental designs be used for comparison.* (And Thought 4A: Is this something that neighbouring councils could usefully collaborate on?)

How much of our current concern with financial sustainability is the result of a previous *lack of concern* with life cycle revenues?

read on....

Footnote: Frank also told me about "Fiscal Impact Analysis (PAS 561) Methodologies for Planners" prepared by the American Planning Association, which seems to cover the same ground. You can find out more about this at http://www.planning.org/apastore/Search/Default.aspx?p=4101

THE PRICE OF FAILURE

We have a problem - and a 'pass the parcel' approach won't fix it!

Our infrastructure is ageing and will shortly need extensive renewal. *This will come as no surprise to anyone!*

At the same time population and infrastructure needs are growing. The gap between what we need and what we can afford, or are willing, to pay is termed **"The Infrastructure Deficit".**

The focus so far - from all governments - has been to try to find someone else to shoulder the burden. Thus local governments seek financial relief from the state level, provinces turn to the federal government and the federal government looks to the private sector, who, in turn, exacts a price from the people - us. This 'pass the parcel' approach solves nothing. Moreover it diverts us all from what should be our main focus - *reducing the COST itself to a level that we can manage.*

Good Asset Management can reduce, but not eliminate the problem.

We can reduce the extent of renewal costs by extending the life and utilisation of existing assets but realistically, even after all the best asset management has been done, we are still looking at an average rate of required renewal of around 2% of council's total asset portfolio per annum.

We need a change in focus:

In the past when we see that an asset has 20 years life remaining and a replacement cost of $200M, we have thought:

"We have 20 years to find the money"

However, a more productive way of looking at this problem would be:

"We have 20 years to find a self financing, self -sustaining, alternative

- **and the price of failure is $200M".**

There is an answer! --->

CHANGE BY DESIGN

In the past we have thought of the Infrastructure Deficit as a funding problem

and we have looked to innovative financing measures as the solution - or to handouts from another level of government, or (worst case scenario) a rate rise.

Once we look at it as a Challenge to Seek out Infrastructure Alternatives

then we can see that there are a number of disciplines that we have previously not done much to include in our deliberations.

WE NEED NEW PLAYERS!

Infrastructure Designers, Ecologists, Scientists - who have the capacity to integrate infrastructure in closed loops thus reducing the environmental footprint but also increasing value - value that may be recovered in the form of revenues to sustain the (reduced) whole life costs.

Urban and Social Planners - who focus on how the community uses its infrastructure, and thus what it values and what it will pay for!

Politicians - who have to balance short and long term requirements of their communities and constituents and who pay the price for their failure by the loss of their jobs!

And also of **DEVELOPERS!**

If we can convince a developer that he can provide efficient, ecologically sound infrastructure that increases the value of the development, value that can be recouped in revenue, then we have a very powerful ALLY in solving the Infrastructure Deficit problem.

He will then seek out the services of the designers and ecologists as well as the services of the social planner, for it will be in his interest to do so - and in the interests of the community at large. And he will be a force for persuasion with politicians.

Possible? Indeed! *And it has already been done. There are many examples of innovative design in many locations. Some examples are given on page 8.*

* One commentator said at the **Innovations** Session in Regina said: "We usually think of innovation as *costing* money but really it is just *about putting things together differently so that they save money.*" And he is entirely right.

When all the outcomes of the game point to annihilation, there is only ONE solution. We have - as in the movie "War Games" - to *refuse to play the game, in fact we need to...*

We clearly need to make some changes. I suggest we start with THREE.

1. **We need to stop thinking about the infrastructure Deficit as a funding problem.** - We need to see it as a Design Challenge!

   We need to look at our asset renewal profiles with a focus on the projected intervention time and see the projected cost as the price of failure to create new, financially and ecologically sustainable, infrastructure before the deadline. (see *The Price of Failure*, and *Change by Design* pp 5-6)

2. **We need to stop thinking about infrastructure as a cost** - and start thinking about how to ensure it as adding value.

   New developments nearly always impose a cost on existing residents who end up paying for community growth. But what if, when developers come to you with a proposition for a new development, they are required to demonstrate how revenues from that development will pay for the life cycle costs? Is it possible to establish developments like this. Yes! And it has already been done, in Australia, in Canada and across the world - just not enough! All infrastructure needs to be thought of in this way - producing value rather than cost. *(see Life cycle costs and Life Cycle Revenues, pp 3-4)*

3. **We need to do is to stop thinking of *ASSET* Replacement** and start thinking what FUNCTION OR SERVICE is really needed

   and then look for different ways of providing it. (*See Three Examples on p.8)*

The Infrastructure Deficit is measured by the cost of doing things the way we have always done them. So what if we don't? What if we do things differently?

Innovation - Doing Things Differently

THREE EXAMPLES

This - or this...?

Wastewater Treatment

For smaller rural and dispersed communities, **Wade Nutter (USA)** demonstrated how local land based water treatment reduces energy and chemical costs and uses the soil as a living filter to replace the need for treatment infrastructure. Locally based, so reduces the costs of piping. Store water in winter and use in summer. Fuels biomass growth yielding an ecological and economic solution.

This? ..... or this?

Stormwater management.

Patrick Lucey (Canada) spoke of Integrated Resource Management and closed loop systems that extract heat from waste; generate energy on site using almost all of it, instead of something like 5-25% when generated off site with most lost in transmission; and recycle water reducing total demand on this precious resource. The result is not only ecologically sound but beautiful, adding value to the landscape that can be recouped in land prices.

Kees Nelissen (The Netherlands) described (with video) the use of modular intersecting blocks for footpaths and gutters that can be lifted en block with specially devised machines allowing access to utility corridors. In half a day, buried infrastructure can be accessed, repaired and the footpath restored, minimising both inconvenience and cost. When renewal is required, some 80% of the original blocks can be re-used.

Just some examples of what CAN be done

(references to the above will be provided in the next issue)