

SECTION 9 CAPITAL COST / OPERATING COST

LESSONS:

1. The ongoing maintenance cost is just as important as the capital cost.
2. Consideration at the design stage of staffing numbers required.
3. Use quality materials.
4. Quality heat recovery is a must for all indoor pools.
5. Regardless of a wave pool a separate learners pool is essential.

Most council officers spoken to as part of this review detailed changes to, or omissions from, the original design in order to keep the capital cost of the facility to a pre-determined dollar amount.

In some cases, these omissions resulted in higher running costs. Heat recovery was eliminated from the Moana leisure complex due to cost. \$850,000 has been allowed in this years budget programme so that heat recovery can be added. Three other sites had very poorly designed heat recovery systems which have done little to reduce operational costs and they are now in the process of carrying out upgrading reviews. As almost half the pools visited had either eliminated heat recovery or had inefficient systems installed the importance of getting heat recovery right can not be over emphasised, particularly in view of the savings that can be made in running costs of a well designed system. (See section 7)

It is worth noting that, as a rule of thumb, the facility running costs equal the original capital cost after every five years of operation. Let us say that a facility will last 50 years, (The new building act requires 50 years durability for domestic house framing and structural integrity = that's the law) then the operational cost will equate to 10 times the original capital cost. Yet, there was little evidence that consideration was given to the ongoing operational costs.

While far from a complete list, some of the considerations that may help reduce operational costs are:

- Ensuring that internal features don't make supervision of pool users difficult. In particular in regard leisure, river ride and wave pools, obstructions to the line of sight of lifeguards made supervision difficult, and in some cases more expensive as additional staff were required.
- The more water space and attractions, the higher the staffing costs. Has the cost of staffing been adequately considered? Upper Hutt found staffing costs to be much higher than anticipated. A former manager of the Porirua Pool also said that improvements to that pools design would have reduced staff costs.

- Is the installed pipe work to and from filters correctly sized? Because of the 1985 upgrade of the Code of Practice for Swimming Pools NZS 4441 any retrofitting of pools built prior to 1985 will probably require the upgrading of pipe sizes.
- Install only good quality pumps and motors. The additional cost of this is returned in a longer working life. See section 6 (re the whole of life pump costs = cheap vs quality)
- Good heat recovery design equates to a 4 year pay back and reduced energy costs. The lack of, or poor design of, heat recovery systems resulted in virtually no recovery in half the sites visited. (See Section 7)
- Reception areas large enough to cater for the range of services it is supposed to provide including sales of swim products.
- The learner pool is one of a few areas in a facility that can cover costs and perhaps make a surplus, don't compromise it. Whether you run your own learn to swim programme or contract/lease it out you have the ability to generate good income. Three sites that had included the learner pool as part of the leisure pool are now in the process of installing a dedicated learner facility.
- Pool switchboards housed and ventilated separately and not in an open plant room. Generally speaking the switchboard area of sites visited was housed in plant rooms exposed to chlorine fumes or in cupboards without adequate ventilation. This may have seen a saving in the capital cost but is a recipe for increased maintenance costs and in at least one case a near disaster. (see appendix C)
- It is essential to have pipe work accessible, pipe work in separate tunnels rather than buried under poolside concrete and tiles. The Porirua example of backfilling their dedicated pipe work tunnel with sand and another example of testing pipe work for leaks , which were found, prior to burying them under a concrete floor had the potential for disaster.

Either poor choice of materials or poor design, or a combination of both, with bad condensation problems resulting in corroded steel beams and supports in almost half of the facilities visited. (See Section 7) Three pool managers mentioned the use of mild steel within their facilities, resulting in continual maintenance. Any steel immersed in or near chlorinated water should be stainless steel 316 grade.



Corroded steel supports.

If cost was the reason for deciding on the use of mild or even galvanised steel within the pool building then it is a false economy in terms of ongoing maintenance costs this is a typical example of little or no consideration being given to the ongoing and ever increasing running costs of pool facilities.

Another example is not double glazing outside pool hall windows, once again this omission can have a considerable bearing on energy costs.

It is my view that more consideration needs to be given to the ongoing running costs of the facility. Reducing the capital cost by deletions and/or installing inferior building or operational equipment will not only increase maintenance costs but possibly result in unexpected pool closures. The provision of “cool” attractions can certainly result in increased pool patronage, in the short term at least, but it is equally important to consider the ongoing running/maintenance costs involved to establish if the capital investment can be justified. Most of the pool managers interviewed, who had wave pools as part of their facilities, mentioned the high maintenance costs associated with them. I, and many of my colleagues, remain unconvinced as to the real merit of wave pools (see section 12).

The Karori and Alexandra Pools deleted a water slide in order to reduce the capital cost; however provision was made within the design to allow for the slide to be easily accommodated at a later date. Poolside space was made available and the associated pipe work required for the slide was installed as part of the original design. A similar situation occurred with the Nae Nae learner pool. Pipe work was provided within the pool floor, with connections, so that a variety of water attractions could be added and changed

as and when required. The only cost involved was for the pipe and connections. This has given this pool great flexibility.

These three examples show that with a little foresight and lateral thinking, attractions that can not be afforded initially can still be considered at the design stage rather than be completely dismissed as too expensive. In all three cases the additional cost to allow for these projected uses was or will be negligible.

In contrast to these three examples the lack of foresight shown, in regard the previously mentioned two heat recovery retrofits and three sites now making provision for dedicated learner pools after they were initially part of the leisure/wave pool, show that the capital saving involved was a false or very short term economy. Likewise, repairs or modifications to buried pipe work are hugely expensive in relation to those contained within tunnels.

The examples given of heat recovery deletions or poor initial design, epoxy coated pool floor surrounds, lack of consideration of staffing costs within the pool design, selecting the cheapest tender price, the use of mild steel within the pool building, inadequate supervision during the construction stage, poor location of the pool, not adequately ventilating electrical and plant areas, compromising the entry/ reception area, poor access and parking, not making provision for later attractions at the design stage will all impact unfavourably on the ongoing running costs of the facility.

RECOMMENDATIONS:

1. That switch boards are housed separately in a ventilated room.
2. Stainless steel 316 grade is used within the pool hall on all fittings and fixtures.
3. Allow for future additions at the design stage. Attractions may not be affordable initially, allowing for them in the future will create savings.