



A GUIDE TO **AQUATIC** **PLANNING AND** **PROCUREMENT** **OF COMMERCIAL AND PUBLIC SWIMMING POOLS**

Planning and Procurement Advice for Australian Commercial Projects.

A guide book based on frequently asked questions.

ABOUT THE AUTHOR

With some 54 years of experience, Crystal Pools answers many frequently asked questions (FAQ) relating to the planning and procurement of commercial public swimming pools.

It's a unique and frank insight on this complex subject. Insights drawn from experience with hundreds of varied swimming pool projects, using vastly different delivery methods.

The path to successful aquatic development has proven difficult for some organisations around Australia. This information is provided to assist the potential pool owner in fulfilling their aquatic vision with certainty.

A GUIDE TO AQUATIC PLANNING & PROCUREMENT

Answers to frequently asked questions

	TABLE OF CONTENTS	PAGE
	The history of swimming pools in Australia and what makes some projects difficult to deliver?	4
	How do prospective owners best satisfy their aquatic ambitions?	5
	Why select an aquatic consultant?	5
	Importance of design team selection. What are the potential pitfalls?	6
	When designing an aquatic centre, what are the important criteria?	8
	What are the potential issues associated with indoor pools?	9
	How does a prospective owner address risks associated with commercial viability?	10
	Is the expense of addressing public health concerns justifiable?	11
	Why is the contract method thought to be an early design consideration?	12
	What advice can Crystal Pools provide to owners contemplating a D&C project?	13
	Which types of pools are the most challenging to deliver?	14
	What services can Crystal Pools contribute to the Aquatic Planning Process?	14
	What does Crystal Pools recommend?	15

The history of swimming pools in Australia and what makes some projects difficult to deliver?

The first pool to use filtered chlorinated water in Australia was a public pool in Wickham Street, Brisbane. This was shortly followed by the Tattersall's Club pool in 1924 and the YMCA Pool in Melbourne in 1925.

All of these early pools were operated on the principal of "marginal chlorination" with chloramines (a relatively weak and undesirable oxidant) providing the primary means of residual disinfection.

The modern treatment of swimming pools is widely attributed to work done in the UK during the early 1950's by Dr. A.T. Palin PhD (OBE) with his understanding of chloramines formation and breakpoint chlorination. Crystal Pools was founded in 1957 and so we are proud to claim we've had an active role in advancing in the Australian swimming industry virtually since its inception.

Half a century on it can be said that the swimming pool industry is still a comparatively young and fast moving industry that is required to contend with; ever increasing health standards, environmental challenges,

critical sustainability issues and cost of ownership challenges. There is a perception about pools being difficult to deliver. Yet rather than being 'difficult to deliver', it's more accurate to suggest the design issues of a commercial swimming pool are complexly inter-related. They are heavily reliant upon many intricate value judgements.

Issues such as;

- tender methods,
- specialised pool construction techniques,
- best aquatic practice,
- process treatment choices,
- pool use and program needs.

These value judgements should be made corroboratively with the potential owner. And so the development of a successful swimming pool is reliant upon a systematic and well managed development process. It's an approach which must embrace sound technical knowledge and practical applied experience.

When difficulties are encountered with the development of an aquatic facility this is invariably a direct result of inexperience leading to; inadequate communication, lack of specialist pool construction knowledge, poor consultation and inadequate cost management.

"RATHER THAN BEING 'DIFFICULT TO DELIVER', IT'S MORE ACCURATE TO SUGGEST THE DESIGN ISSUES OF A COMMERCIAL SWIMMING POOL ARE COMPLEXLY INTER-RELATED"

How do prospective owners best satisfy their aquatic ambitions?

With compelling public health and social benefits being derived from well designed commercial swimming pools, there are now many publicly available guidelines and references to help potential owners.

For example, various local governments have literature available for reference to help identify and manage the various steps necessary to obtain a predictable outcome.

Whilst it may be an over simplification, we believe a well conceived planning process commonly incorporates **four critical phases:**

Phase 1 Needs Assessment (Reviews any existing assets, gathers information, assesses community needs and expectations and develops a proposal)

Phase 2 Feasibility Study (Conducts a market analysis, assesses financial viability, develops a management plan and a concept plan)

Phase 3 Design (Prepares a design brief, establishes a delivery method, appoints a design team, prepares a concept design, develops the design and produces contract documentation)

Phase 4 Construction (and handover).

Given the very specialised nature of aquatics it is inappropriate (perhaps even naive) to have much of the above planning fall solely on the shoulders of the local Town or Council Engineer. Only systematic and methodical planning will guarantee an acceptable and predictable outcome for potential owners.

Why select an aquatic consultant?

A client may select an architect project leader as a result of a competitive tendering process. In many cases the architect is required to (or they will) propose their own design team.

Such teams will commonly comprise numerous sub consultants according to the project's needs. Under the architect's leadership, a typical project team would include a structural engineer, mechanical and electrical engineer, cost planner or quantity surveyor, acoustic consultant, etc.

To retain greater control over the critical 'design' process, many informed clients prefer

a more proactive approach, whereby they select and appoint individual consultants for specific tasks. Given its very specialised nature the most common example would be the appointment of an aquatics engineer who assumes the responsibility for all pool water retaining structures and associated Pool Water Treatment (PWT) plant. This method also allows the client to choose an expert "pool" consultant on the basis of experience, credentials, and design capability.

Arguably the swimming pool component is the most important service associated with the development of a successful aquatic centre. It makes good sense for a client to have direct access to an accredited aquatic consultant, who has expertise with the pool water retaining structures and the Pool Water Treatment (PWT) plant. It is often concluded

"MANY INFORMED CLIENTS PREFER A FAR MORE PROACTIVE APPROACH, WHEREBY THEY SELECT AND APPOINT INDIVIDUAL CONSULTANTS"

“IT’S STRONGLY RECOMMENDED THAT AN INITIAL EOI (EXPRESSION OF INTEREST) PROCESS BE USED TO ESTABLISH A SHORT LIST OF PREQUALIFIED CANDIDATES”

that the work of other service engineers (providing general advice and design on electrical requirements, general plumbing and drainage, and even mechanical services) is more related to the pool hall enclosure. Their services are usually best placed under the direction and the management of a selected architect.

It’s worth noting that in by-gone days the aquatics engineer was more commonly the team leader. In that era, if the project did require some architecture (for the design of change rooms, for example), the architect was more commonly appointed by the aquatic engineer or the owner. With the advent of indoor leisure centres, it has become more commonplace for the architect to be considered as the team leader. Notably this does not always need to be the case and owners are well advised to consider all possible options available to best suit their specific needs.

Importance of design team selection. What are the potential pitfalls?

The selection of a design team is not important, it’s absolutely critical!

There are numerous references describing a ‘cost triangle’, whereby the ‘design’ component will tend to dictate the project costs (despite

“the learning curve in designing leisure buildings is both long and steep and it is inevitable that an architect approaching these problems for the first, second, or even third time, will make a large number of expensive mistakes – don’t let them gain this experience at your expense!”

From “The Role of the Leisure Architect” by Stuart Miller (Miller and Associates, Architects) The Leisure Manager (May 1990)

When tendering for consultants (be it an architect or an aquatic engineer) potential owners should recognise the commercial reality that there are very few accredited consultants who are able to concentrate solely on aquatic developments. With this in mind, it’s strongly recommended that an initial EOI (Expression of Interest) process be used to establish a short list of prequalified candidates. With an “open” tender process, it is not unusual that a project may attract twelve or more respondents. Apart from the obvious difficulties in assessing this sheer number of candidates, the probability of a poor selection increases dramatically.

Potential owners should also be particularly wary of “contractors” hiding under the wings of an architect to pretend as bona fide sub consultants. Whilst this tactic is a risk for the credibility of the architect, it is still a rather commonplace as the architect is able to steal an unfair commercial advantage. This is because of the seemingly lower fee structure of a contractor and potential tenderer, who also acts as a consultant. For obvious reasons fees from contractors (pretending to be sub consultants) will always be far lower than what can be expected from an independent professional sub consultant.

only costing 10 percent of the total project cost). The owner has a duty of care to be intimately and actively involved with the appointment of the best possible consulting team. Any sensible review of the available literature will quickly reinforce the importance of *design team selection*.

Consider the following:-

“...we are also conscious that all too often architecture has been designed for the appreciation of academics, a kind of architectural pornography for consenting architects only. We believe in getting a manageable facility first, in the knowledge that given proper attention, good architecture will always follow”.

From “The Leisure Architect” by Nigel Grayshon. The Leisure Manager (May 1991)

Effective swimming pool design will commonly require an interpolation of many competing objectives and needs.

Such needs will commonly include;

- Compliance with public health and Australian Standards,
- Existence of international and state-based Swimming Pool Guidelines,
- Disabled Access Legislation,
- Occupational Health and Safety Legislation,
- Government Procurement Policy,
- Project costs and budget constraints,
- Compliance with best engineering practice,
- Empirical data and plant/pipe sizing requirements,
- Manageable procurement,
- Transparent and productive tender methods,
- Specific industry knowledge,
- Specialised construction and installation requirements,
- Issues relating to Environmentally Sustainable Design (ESD),
- Evidence of similar and successful case history,
- Specific client expectations,
- Special project and or program requirements,
- Life Cycle Costs (LCC),
- Risk analysis and risk management,
- Modern process treatment knowledge,
- Hydraulics, mechanical and structural engineering, and
- Chemical treatment.

In light of the many complex and inter-related issues, it is not unusual that the technical requirements and the value judgements, which are made by particular designers, will often require detailed discussion and agreement throughout a design development phase. For this reason, the design development phase will commonly allocate adequate time (with specific hold points) for the owner to review their needs and their expectations.

To appreciate the potential pitfalls associated with the initial “design” process it is important to be aware that many aquatic developments fail to produce sufficient income to meet their annual operating costs. The very few aquatic developments that do manage to meet their annual operating costs often have minimal and fluctuating returns.

Whilst it’s true that some community swimming pools tend to struggle financially, there are also many references to confirm the immeasurable social benefit that can be obtained with a well-planned and appropriate aquatic development.

“THE DESIGN DEVELOPMENT PHASE WILL COMMONLY ALLOCATE ADEQUATE TIME (WITH SPECIFIC HOLD POINTS) FOR THE OWNER TO REVIEW THEIR NEEDS AND THEIR EXPECTATIONS”

When designing an aquatic centre, what are the important criteria?

As discussed, many design issues and construction requirements of a commercial pool are complexly inter-related. Development relies heavily on technical knowledge and applied experience.

Therefore, regardless of the selected delivery method, the consultant (or a contractor) will commonly “partner” with the client to work through a number of competing needs and objectives.

Some of these objectives are as follows:

- Preferably enclose the largest and most versatile water space affordable.
- Provide practical options and client choices consistent to the detailed project brief.
- Provide air and water quality for maximum user comfort and appeal.
- Provide water and air temperatures appropriate to specific program requirements.
- Use Life Cycle Cost principles to ensure the specification of processes and products that will provide the lowest (long-term) cost of ownership.
- Use ESD principles to contribute to the projects sustainability and financial viability.
- Determine plant type and capacity, according to infinite bather load, pool occupancy, NSW Health requirements.
- Pursue proven water minimisation and water conservation methods and products.
- Consider the tender and contract arrangements best suited to the owner’s procurement.
- Consider the operation of the facility from the owners and the operators perspective.
- Produce timely design drawings and complete specifications to allow the works to proceed predictably in a logical but fast-track sequence.

When developing an initial concept design, the designer will also commonly consider the following:

SAFETY

To allow for good supervision and to provide water depths that are suited to specific user groups and program needs; to avoid hazards; to clearly define different areas and water depths.

FUN

To provide fun type elements to help young non-swimmers gain confidence and familiarity with the water. To integrate proven play features (bubbles, water sprays, and jets) to maximize enjoyment level.

TEACHING SPACE

To provide areas for learn to swim and stroke correction with easy access and suitable deck space for parent groups.

FLEXIBILITY

To provide for diverse age groups from small children to the elderly and the disabled; to cater for different abilities from non-swimmers to lap swimmers; to allow for competition without adversely affecting other regular program needs; to provide areas where specific zones can be segregated for different instructor groups; to provide suitable and appropriate water temperatures.

COMMERCIAL VIABILITY

To allow for flexibility of use; for the potential lease-out of associated facilities either to the Operator or the Community; to ensure that the design incorporates both functional and low maintenance finishes and that the whole complex can be run as a low energy integrated system.

What are the potential issues associated with indoor pools?

If one of the key design objectives is to enclose the largest waterspace affordable. What are the issues and risks?

Many early attempts to construct an indoor heated pool resulted in conditions significantly inferior to modern pools and they were very expensive in terms of maintenance costs. Problems included; improper illumination, poor ventilation, high humidity, excessive noise and high reverberation. In addition to these issues poor water quality often posed serious public health concern. Now there’s a substantial case history to confirm indoor heated pools benefitted from advancement through engineering and science. The outcome though, is a comparatively more complicated and expensive building.

In part the above helps to explain the caveat, whereby the size of pool hall should be carefully tempered by what is truly affordable. Smart pool designers will often limit the size of the pool hall enclosure to best suit pools that have specific year round uses (and or specific water temperatures) like hydrotherapy pools, learn-to-swim (LTS) pools, program pools and leisure pools.

To appreciate the many problems associated with indoor heated pools it is important to have a complete understanding of the chlorination process. Even in moderately loaded indoor pools it is quite common that the rate and the type of contamination will often exceed the reaction time for a traditional disinfectant to perform its task. To overcome this problem, excessively high chemical residuals are usually required to create an adequate “reserve” or build-up that is capable

“SMART POOL DESIGNERS WILL OFTEN LIMIT THE SIZE OF THE POOL HALL ENCLOSURE TO BEST SUIT POOLS THAT HAVE SPECIFIC YEAR ROUND USES”

of satisfying a likely/predicted load. This is by no means a simple or easy task. Furthermore, as reported by numerous health authorities, exposure to high chemical-levels is not in the bather’s best interests.

Apart from any health issues, chemical smells and tastes within the pool hall (and the pool water) are neither, pleasant and or desirable. Rather than be exposed to strong and undesirable pool chemicals, advanced oxidation provides a technical solution whereby regular super-chlorination and high chemical residuals can be avoided. Processes like high intensity medium pressure UV have become an almost mandatory requirement for any indoor heated pool.

“PROCESSES LIKE HIGH INTENSITY MEDIUM PRESSURE UV HAVE BECOME AN ALMOST MANDATORY REQUIREMENT FOR ANY INDOOR HEATED POOL”

“LIFE CYCLE COST PRINCIPLES ENSURE THE SPECIFICATION OF PROCESSES AND PRODUCTS THAT WILL PROVIDE THE LOWEST (LONG-TERM) COST OF OWNERSHIP”

How does a prospective owner address risks associated with commercial viability?

Perhaps the most fundamental way to secure financial viability is to first ensure the size of a proposed waterspace is sufficient for the community's needs.

This must be done without incurring excess which, throughout the life of the development, can not be reasonably sustained.

In some cases an uninformed owner bypasses planning conventions and conceives an overly ambitious plan, typically drawing inspiration from another project. This approach is inevitably made through casual visual observations.

A more commonplace method for securing a financially viable future is to include the development of specific aims and business objectives to attract widespread interest and support from the local community and possible investors. In cases where this has been done, the capital cost burden does not rest solely

“IT IS IMPORTANT TO RECOGNISE INDUSTRY RESEARCH CONFIRMS THAT 60 TO 70 PERCENT OF FACILITY USERS COME FROM THE RECREATIONAL LEISURE SECTOR WHILST ONLY 20 TO 30 PERCENT COMES FROM THE COMPETITIVE, TRAINING AND FITNESS MARKET”

with the owner, potential users and/or the local community. Examples of this strategy include the development of commercial spas and or learn-to-swim pools that can be sufficiently segregated and potentially become business opportunities in their own right.

Another example identifies a possible synergy (and cost sharing) with other developments that may generate extra income. This can contribute to the aquatics centre's operating costs. In its simplest form it may be the

inclusion of a retail outlet, a child minding facility or gymnasium.

It is important to recognise industry research confirms that 60 to 70 percent of facility users come from the recreational leisure sector whilst only 20 to 30 percent comes from the competitive, training and fitness market. Whilst the health, therapy, education and wellness market is currently a major growth sector, it currently accounts for just 10 to 20 percent of centre usage. With an aging population this latter market is predicted to expand rapidly.

The most successful and viable aquatic centres in Australia attract users from all three prime markets by offering relevant water spaces, appropriate water temperatures and extended swimming seasons. Financial viability is largely predicated upon the provision of the right waterspaces to best cater for modern market needs and demand. It is important not to be excessively swayed by small lobby groups who believe that a 10-lane 50m indoor pool should dominate the proposed development.

Arguably, the most important consideration for a purchaser is to pay far more attention to the cost of ownership, rather than the apparent tender price. Regrettably we must recognise that due to shortcoming in an ordinary competitive tendering process (coupled with a typically low standard of evaluation skills) that the lowest tender cost will commonly have the highest cost of ownership. Procurement cost may appear a simple criterion, yet it can often result in very poor financial decisions, because it does not adequately consider whole of life costs.

A prime example of the above issue is the choice between a concrete pool (with a proven 50 year service life) and a pre-engineered panel pool, which may have a service life of only 25 years. Whilst the tendered price of these two options may seem similar, a prefabricated panel pool does not provide the same value. It is unlikely to provide the same longevity and carries higher likelihood of costly repair.

Is the expense of addressing public health concerns justifiable?

Contrary to popular belief, treatment of a commercial swimming pool can pose more complex problems than those associated with drinking water.

It's worth noting that when each bather enters a pool, they will commonly introduce;

- One litre of sweat after swimming actively for one hour,
- 50 ml of urine,
- 0.5 to 1.0 grams of other organic matter,
- 600 million micro-organisms, including 1 to 10 million colon bacteria.

Swimming pools are inherently a captive body of water subject to all sorts of variable conditions and loads. These factors do not normally exist when treating water in a single pass.

Exchange rate from the human body is typically the largest single contributor of dirt load, other significant factors include;

- the pool's water temperate,
- the existence of wind blown dirt and material,
- the lack of a smooth pool interior,
- poor algal control,
- inadequate chemical dosing,
- nonexistent bather management,
- poor/low quality make-up water,
- inadequate design,
- undersized and inappropriate filtration equipment,
- inadequate turnover rate,
- deviation from best practice, and
- failure to conduct adequate and regular water tests.

It's interesting to note that the term 'exchange rate from the human body' is often used on the basis of being a far more palatable means

“STATE BASED HEALTH CODES, STANDARDS AND GUIDELINES EXIST FOR GOOD REASON”

of describing excretions from the human body that include mucous (including sputum), urine, faecal matter, dead skin, body oils, ear wax, and hair. Out of all these faecal matter (due to the fact that considerable bacteria resides within the intestinal tract) is widely considered to be most common and problematic. No wonder the term 'exchange rate from the human body' is preferred.

All of the above issues can be confidently managed with the operation of three inter-related and interacting systems:

- An effective means of recirculating and mixing of the dirt load and or any chemicals that are added to the pool for sterilization and or water balance.
- A system for the removal of particles by filtration.
- An effective chemical dosing program.

The need for effective mixing and recirculation within the pool basin confirms the very close inter-relationships that exist between pool construction and pool water treatment. These separate services are always best provided under the management and control of one accredited pool contractor.

State based health codes, standards and guidelines exist for good reason. In many cases such references are explicitly related to government legislation, whereby any non-compliance removes any grounds for defence. Ignoring the obvious duty of care, there is also ample evidence to confirm that good water quality will encourage pool patronage and therefore improve the viability of the whole development.

Why is the contract method thought to be an early design consideration?

Just as cart always comes after horse, potential owners should insist their design team provides early advice on the different contracting methods available for a specific project.

As demonstrated in the series of Crystal Pools case history examples, clients may use a variety of different contract types for different purposes. The contract route chosen will dictate the extent and the type of documentation ultimately produced by the design team. Logically this a fundamental choice that needs to be made early in the design process.

To obtain optimum value from your consulting team, fully detailed documentation should be a basic prerequisite. Inexperienced consultants, who promote hybrid methods and products, are commonly exposed by their preferable use of performance specifications, whereby the tenderer is required to assume some level of design responsibility. This methodology worked in the past however the industry now quotes using an appropriate design and construct mechanism when asked to assume responsibility for work done by others.

When a consultant abdicates or shifts any responsibility back onto the selected contractor its a fair sign you have selected the wrong consultant.

The type of facility being planned will have a bearing on which contract method to select.

“A SELECT TENDER PROCESS EFFECTIVELY REDUCES THE NUMBER OF RESPONDENTS TO THOSE WHO CAN SATISFY SIMPLE BUT CRITICAL PREREQUISITES SUCH AS APPLIED EXPERIENCE, FINANCIAL ADEQUACY, PROVEN CAPABILITY AND MORE”

For outdoor pools with basic infrastructure, there may be no need for a traditional “head contractor”. Conversely, for an indoor leisure centre the substantial building works and associated services will usually dictate use of a head contractor.

Most of the common contracts in use today have specific provisions for the safe and effective use of **Nominated Sub Contractors** (NSC). This method is sometimes criticised by traditional consultants on the basis that it requires early consideration and seemingly more work for the consultants. Potential owners should carefully consider the many benefits and the transparent security that can be readily delivered under NSC Agreements.

First and foremost, the NSC tender method provides an owner the opportunity to review several competing bids and to make a selection on the basis of the submitted details. When the head contractor selects and promotes a pool subcontractor, the owner usually has only one option to consider. Under the commercial pressures of the open tender system, the head contractor promotes his chosen pool contractor, often the market’s cheapest option, chosen on the belief the lowest apparent cost will be the “winning” tender.

It is a system which inadvertently takes away regard for any other issues that might otherwise affect his choice of contractor.

NSC agreements and select tender process

When using an NSC Agreement potential head contractors find relief from the commercial pressure and the technical responsibility to select the best qualified pool contractor for the project. Where there are perceived difficulties in utilising a NSC Agreement, some clients have protected themselves from the ravages of open head contracts by using a **select tender process**. This effectively reduces the number of respondents to those who can satisfy simple but critical prerequisites such as applied experience, financial adequacy, proven capability and more.

Crystal Pools has excellent relations with many accredited head contractors and is commonly rewarded with regular opportunities for repeat business. Regrettably there are some head contractors operating within the industry who try to simplify the process. This inevitably has serious business ramifications for the owner.

There are also cases where head contractors have attempted to construct swimming pools

themselves and the outcomes are never positive.

Ultimately it falls on the purchaser, who has a clear duty of care, to scrutinise the whole design and planning processes. In doing so they’re able to carefully consider options and extract the best value and performance from their consultants.

What advice can Crystal Pools provide to owners contemplating a D&C project?

Behind closed doors some consultants will be critical of the **Design and Construct** process. It must also be said that when the consultant is a D&C team member it is a commercial reality that their engineering fees are customarily far lower than when working direct for the owner.

This difference in fee structure is due to very significant differences in scope, rather than any difference in quality. For example; with a D&C project there is no need for a consultant to prepare any tender documentation. Similarly, the D&C contractor is by nature well placed to provide definitive instructions; to provide all necessary co-ordination within the team; and most importantly, to assume the ultimate responsibility for the D&C process.

The D&C process commonly provides a far lower construction cost and a quicker delivery time, without compromising consideration of client choices, design options or quality. When operating under a D&C framework, Crystal Pools will commonly offer their clients the flexibility of having a **Cost Managed System Design** (CMSD). With this arrangement the client can readily refine the project’s requirements (throughout the design development phase) in

a financially responsible and transparent manner.

Given the very critical nature of having a detailed project brief, our first suggestion is to obtain expert advice. To obtain a ‘level playing field’ Crystal Pools will often gladly contribute to the preparation of a project brief. In many cases, a project brief requires the same (or similar) schematic design as is required with a fully designed project.

Whilst the cost of having a project brief written by an aquatic consultant may seem daunting, such costs can usually be readily justified on the basis of achieving a better tender result, which in turn extracts greater commitment from the contractor and therefore greater certainty for the owner.

Our second suggestion is that when reviewing any D&C tender, look closely for the inclusion of an experienced and prequalified pool engineer. The existence of a formal design plan and a competent team of subcontractors will also provide a strong clue as to the general quality of a bid. There is substantial case history to confirm that some

“THE D&C PROCESS COMMONLY PROVIDES A FAR LOWER CONSTRUCTION COST AND A QUICKER DELIVERY TIME, WITHOUT COMPROMISING CONSIDERATION OF CLIENT CHOICES, DESIGN OPTIONS OR QUALITY.”

“WHEN REVIEWING ANY D&C TENDER, LOOK CLOSELY FOR THE INCLUSION OF AN EXPERIENCED AND PREQUALIFIED POOL ENGINEER”

second-grade pool contractors will often try to steal commercial advantage by introducing sub consultants and subcontractors, who have little or no experience.

Beware of a tender indicating the names of sub consultants and subcontractors 'will be advised'. It essentially means you'll end up with the cheapest they can find. Also be cautious of tenders suggesting almost every aspect and trade will be done 'in-house'. This

is code for 'we think there is no need for any expert independent opinions'.

The governing principles used for other delivery methods apply equally to the D&C method. Don't let over ambitious objectives and apparent low tender prices draw you into a scheme that has such a high cost of ownership that the project becomes an unsustainable white elephant.

What services can Crystal Pools contribute to the Aquatic Planning Process?

Crystal Pools are not aquatic consultants. We are accredited pool designers with over 54 years applied experience on thousands of complex commercial projects.

Commercial services offered

Engineering Services

- Condition and Engineering Assessment Reports
- Feasibility Studies - Issues and Options Papers
- Compliance Check and Engineering Certification
- Estimates of Likely Probable Costs (Budgets)
- Performance Specifications - Tender Documentation
- Design and Construct Proposals

Construction Services

- Wet-deck soiled water collection gutters replacing ineffective scum gutters

- New and supplementary filtered water distribution systems
- Waterproofing, joint repairs, re-surfacing, concrete repairs, etc.,
- Structural modifications, re-profiling of pool floors, disabled access ramps
- The addition of new supplementary water spaces; spas, water playgrounds, program pools, etc.,
- Construction of balance tanks to permit harvesting and storage of rainfall
- Backwash detention systems.
- Aquatic fit-out with modern pool furniture and appliances.
- Choice of interior linings

Mechanical and Hydraulic Services

- Supply and installation of pool water treatment plants
- Supply of chemical dosing systems
- Supply of pool heating systems
- Energy management systems
- Upgrade of Chemical Storage Facilities
- Wash water recovery systems
- Maintenance Contracts
- Operator Training

In summary, what does Crystal Pools recommend?

- Use a systematic four phase planning approach, with assistance from carefully selected experts.
- Make sure your development is appropriate for the community's needs. Be careful not to incur excesses that might be unsustainable in economic terms.
- Balance the mix of proposed water spaces to satisfy the current and future market demand.
- Use an EOI process to help pick your consultants carefully.
- Take a proactive approach when selecting and appointing your own independent aquatics engineer.
- For the specialised pool component use a Select Tender Process or a Nominated Subcontract Agreement that allows you the owner to appoint the best possible pool contractor for the project.
- Insist on an accredited pool contractor.
- Don't write-off the D&C delivery method until you have properly assessed its benefits.
- Ensure you have achieved a good design before proceeding to a purchasing decision.
- Use a transparent tendering method to ensure value over price.
- Understand that the planning and procurement phase is your opportunity to minimise exposure to risk and to weed out practices and/or operators that may threaten your project.

STANDARD DISCLAIMER

The opinions contained within this guide to our frequently asked question are based upon the experience that CRYSTAL POOLS has obtained over a 54 year period with hundreds of varied projects using vastly different procurement methods. Crystal Pools does not accept any responsibility for the accuracy of this information and or its potential use. Comments and suggestions relating to this publication can be sent via our website (www.crystalpools.com.au). Crystal Pools encourages all readers to conduct their own independent research.



A GUIDE TO
AQUATIC
PLANNING AND
PROCUREMENT
OF COMMERCIAL AND PUBLIC SWIMMING POOLS

For no-obligation advice at any stage of your project or to obtain further information on procurement and planning of aquatic projects please call (02) 9875 4555 or email Crystal Pools' Commercial Pools

Director Paul Hicken via paulh@crystalpools.com.au