

STAGE 1





STAGE 1: CONCEPT

If you look around the country you will see a vast range of indoor aquatic and indoor court facility designs. Many were designed to meet community needs at the time and took little account of future demands and needs. Others were designed to meet the requirements of the highest levels of competition and training, and are under-utilised because they are specialised and not suited to multi-use. Most operate at a net cost to their communities, usually funded by ratepayer subsidies. Therefore it is imperative before any facility is built that a thorough and considered process be undertaken.

New Zealanders need the right facilities in the right places at an affordable capital and operating cost to achieve the various, and sometimes competing, community aspirations and outcomes such as generating greater participation. The success of these facilities requires the clear identification of facility needs, good decision-making, more collaboration and smarter investment by relevant stakeholders and agencies.

A challenge is to understand the desired future state and quantify the 'needs' vs the 'wants'. A sport and recreation group or organisation needs its strategy to articulate what the future users of its facility will look like. What are the demographic changes that will impact on participation and what are the general participation trends? What facilities are in the current network and what gap would be filled by the proposed development strategy? It is very difficult for funders to make these decisions without solid evidence that there is a need for a facility.

Many funders now require groups applying for significant capital grants to submit feasibility studies in their supporting documentation. A group looking to source external funding may be building a new facility, purchasing an existing building or undertaking major renovations.

Access to professional expertise helps organisations to take an impartial look at the current and future needs of their communities, and develop sound project plans and appropriate funding strategies.

One of the biggest issues in facility management is the lack of involvement of facility managers at the design stage. Many issues that affect the operation and management of a facility occur because of a lack of early engagement of operators.

Facility managers are best placed to provide advice at the design phase regarding both design and operational issues, as well as balanced input into user demands and needs.

Companion documents to this guide – the *Facility Management Manual* and *Aquatic Facility Guidelines* – can also be found on the Sport NZ website. These provide valuable additional guidance for planning, developing and operating community sport and recreation facilities.

Further information:

www.sportnz.org.nz/aquaticfacilityguidelines

www.sportnz.org.nz/facilitymanagementmanual

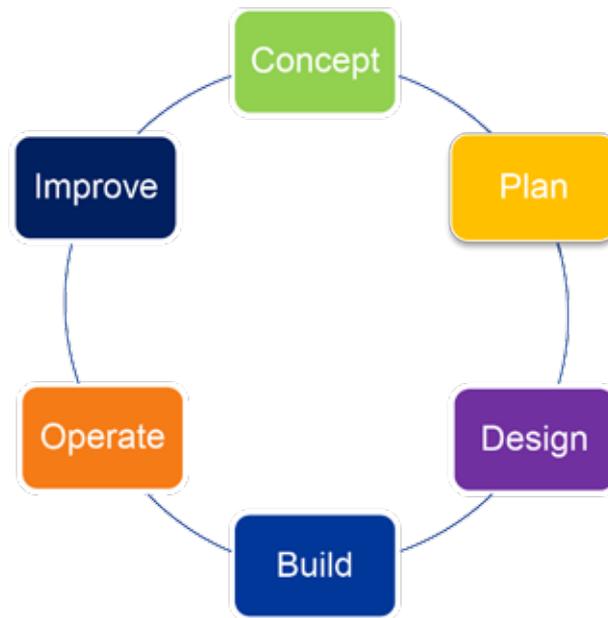


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Strategic Context – National Sporting Facilities Framework

Sport NZ's vision is to see New Zealand with a world-leading network of sports facilities. This network will enable and inspire people to participate in the New Zealand *Sporting Facilities Framework's* six identified stages in the life-cycle of a facility:

Six-Stage Facility Life-cycle



Concept – identifying the need for a facility and developing the strategic case for doing so, including assessing the specific need in the wider context of the desired facility network.

Plan – ensuring the facility will be fit for purpose, sustainable and future-proof. Assessing and determining financial feasibility based on the facility mix.

Design – developing the detailed functional and spatial requirements of the facility based on the facility mix. Details are confirmed and estimates finalised.

Build – constructing the facility.

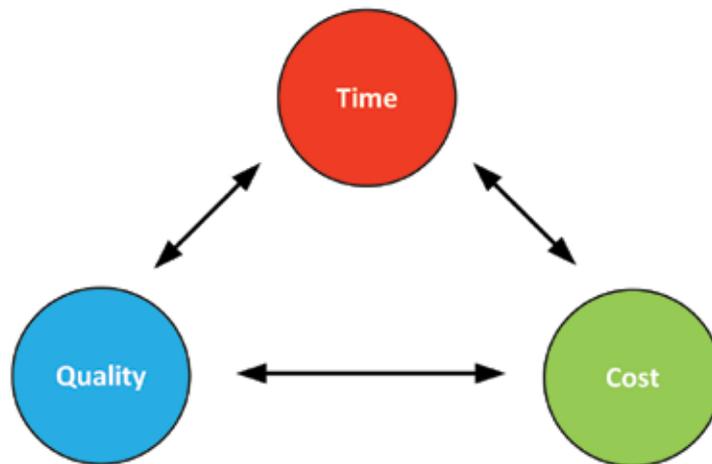
Operate – managing and maintaining of the facility to ensure it delivers a quality experience. Developing the most effective and efficient operating model and the programming of the facility.

Improve – evaluating the success of the facility, how it has delivered on the identified outcomes and objectives, what improvements can be made and any experience or learnings that can be shared.

The greatest impact on the strategic outcome is made in the concept, plan and improve stages of the facility life-cycle.

Affordability

Community sport and recreation usually operates at a net cost to the community. Some of these costs are embedded by decisions made in the planning and design phases. There is a myriad of attributes that will impact on the capital cost and operating cost of the facility and too many to list here. The traditional triangle of cost, quality and time identifies that a project can optimise for two at the expense of the third, but it is impossible to maximise all three at once for each attribute.



The scales below illustrate that there is a spectrum available for most, if not all, attributes and there are compromises and trade-offs needed to achieve an affordable facility for a community with a limited population or high levels of deprivation. Decisions need to be made as to where on the scale of importance each of the components attributes impact on the affordability of the facility. There is a myriad of attributes and the examples below usually generate significant debate and consideration during the planning and design phases.

COMMUNITY	LEVEL OF SPORT COMPETITION/TRAINING	HIGH PERFORMANCE
←		→
LOWER	CAPITAL COST OF PROVISION	HIGHER
←		→
HIGHER	FLEXIBILITY OF SPACE	LOWER
←		→
BASIC	QUALITY OF MATERIALS (CAPITAL)	HIGH
←		→
SHORTER	FUNCTIONAL LIFE OF MATERIALS	LONGER
←		→
HIGHER	COST OF RENEWALS OVER LIFE OF FACILITY	LOWER
←		→
LOW	USE OF DAYLIGHT	HIGH
←		→
HIGHER	LIGHTING (OPERATIONAL COST)	LOWER
←		→



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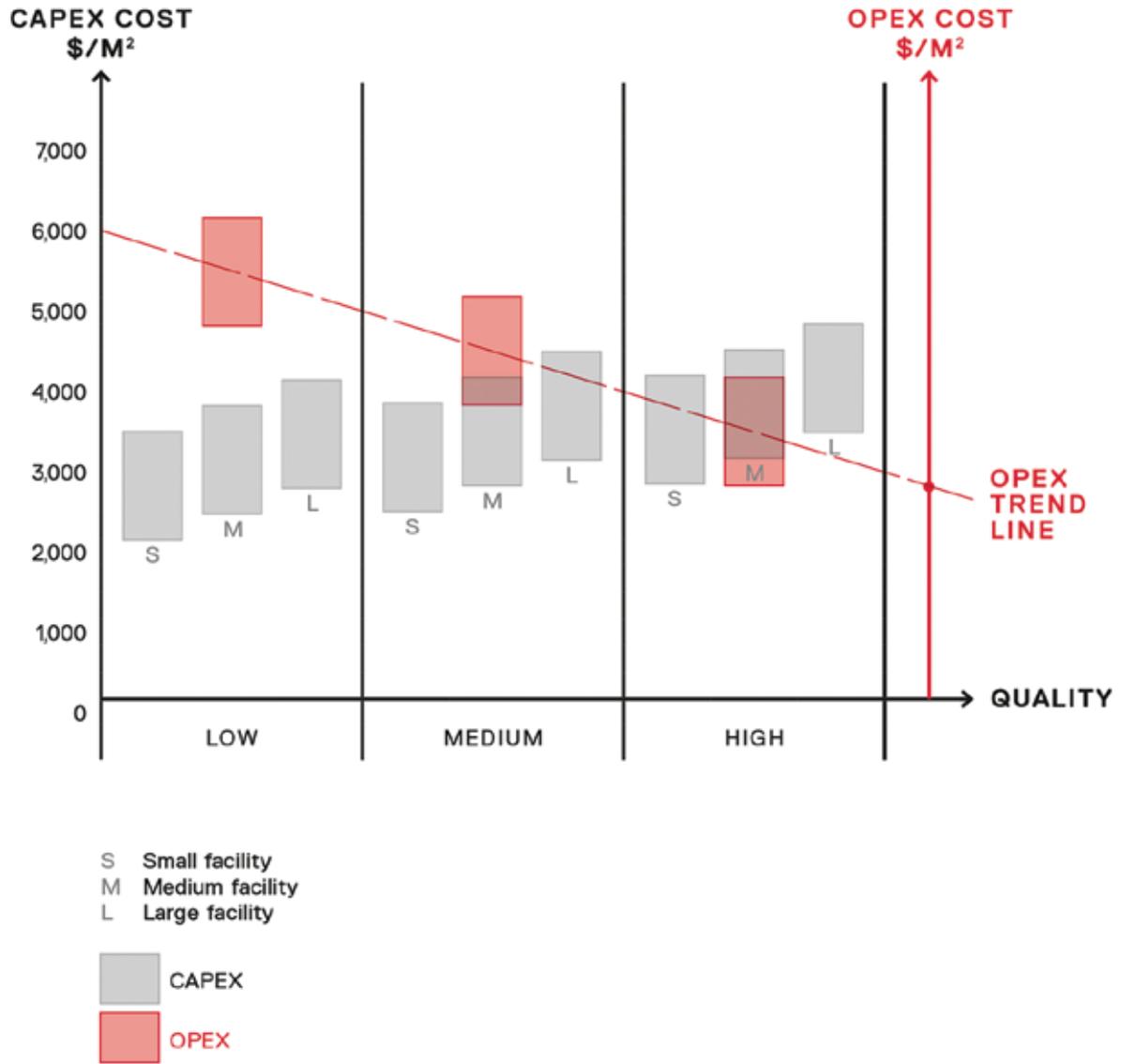
The table and graph below illustrate an indicative building cost range for three different-quality facilities, using the reference facility as the benchmark.

QUALITY	LOW SPORT WAREHOUSE	MEDIUM REFERENCE FACILITY	HIGH CIVIC COMMUNITY BUILDING
CAPEX COST RANGE	\$13,962,490 TO \$15,271,475	\$14,146,230 TO \$15,971,530	\$14,837,400 TO \$16,751,910
POOL HALL			
Building fabric	Kingspan wall and roof panels	Kingspan wall and roof panels	Kingspan wall and roof panels
Acoustic treatment	Nil	Limited panelling	Recommended acoustic panelling
Wall glazing	Nil	Limited	Wall glazing to provide views to foyer and entry spaces
Roof lights (daylighting)	Nil	Nil	Roof lights to provide daylighting and amenity
Pool finish with liner	Stainless steel	Stainless steel	Fully tiled
Floor finish	Broom-finished concrete concourse	Epoxy	Fully tiled
Volume	Low 4m high volume	4-6m high volume	5-7m high volume
Spectator seating	Nil	Single bench	2 or 3 rows of bleachers
SPORTS HALL			
Building fabric	Kingspan wall and roof panels	Kingspan wall and roof panels	Kingspan wall and roof panels
Acoustic treatment	Nil	Limited panelling	Recommended acoustic panelling
Wall glazing	Nil	Limited	Wall glazing to provide views to foyer and entry spaces
Roof lights (daylighting)	Nil	Regular roof light distribution (ie, every grid bay)	Regular roof light distribution (ie, every grid bay)
Floor finish	Paint-finished concrete	Point elastic polyurethane coating over cushioned rubber	Area elastic sprung timber floor or multi-purpose cushioned rubber system
Volume	7.5m clear height	7.5m clear height	9m clear height
Spectator seating zone	Nil. External wall at 3.05m run-off	1m zone around perimeter of court run-off zone for bench seating	1m zone around perimeter of court run-off zone for bench seating

QUALITY	LOW SPORT WAREHOUSE	MEDIUM REFERENCE FACILITY	HIGH CIVIC COMMUNITY BUILDING
CAPEX COST RANGE	\$13,962,490 TO \$15,271,475	\$14,146,230 TO \$15,971,530	\$14,837,400 TO \$16,751,910
CHANGE ROOMS	Paint block walls, sealed concrete floor	Paint block walls, epoxy or tiled floor	Fully tiled floor and walls
FOYER AND ADMIN AREAS	Carpet tile, paint GIB and suspended ceiling	Floor tile, paint GIB and suspended ceiling	Polished concrete, wall tiles and feature ceiling
	 	 	 
	<p>Maintenance Acoustic performance Amenity Daylighting Visual connections Competition level of play</p>	<p>Acoustic performance Amenity Visual connections Competition level of play</p>	<p>Cost</p>
IRREDUCIBLES	<p>The following are not considered possible to reduce due to their health, safety or operation cost impacts:</p> <ul style="list-style-type: none"> • Water quality • Insulation levels • Pool hall concourse widths and court run-off zones 		



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Facility Planning Considerations

A preliminary task in planning a community sport and recreation facility is its alignment with or inclusion in a wider local or regional strategic sport and recreation plan. A sport and recreation plan identifies existing facilities and services, the broad recreation needs of the community and the action required to meet identified needs. It outlines the priorities for sport and recreation facilities and services, ensuring that provision is equitable and efficient.

Many communities in New Zealand are experiencing population growth, while many others are now in 'end-of-growth' mode with static or declining populations for the foreseeable future.

Traditionally, many local authority community sport and recreation facilities have been built for specialist or limited market users (ie, competitive aquatic sports or court sports).

Industry facility trends indicate that revenue rarely meets annual operating costs for the majority of community indoor facilities. To ensure the best financial viability and attract potential interest from other funders or investors, any future facility must be designed with components that have the potential to contribute positive revenue streams and the capacity to be profitable. Positive contributions to operating costs can assist in off-setting the net costs of other components and may help in attracting private commercial investment or services delivery interest.

There is a strong trend of and greater value in the co-location of indoor sport and aquatic facilities with other public or private facilities such as sports parks, retail centres, libraries and community centres so as to create social infrastructure hubs and generate economies of scale.

The ultimate goal is a facility of good quality that meets the expectations of a wide cross-section of its community and has lower operating costs, including those associated with ongoing asset maintenance. Traditionally, our expectation has been that buildings are designed and built for a minimum 50-year life. However, sport and recreation is a highly dynamic sector and it is appropriate to plan for a functionally effective life of 25 years before a major refit or reconfiguration is likely to be required to meet changed community needs. Sound design and detailing will help minimise the operating cost of the facility over its planned life.

Organisations developing aquatic facilities need to consider three distinct user markets:

Recreation and leisure market – (60-70 percent of users) usually made up of families, people coming with friends and groups for fun, relaxation, social activity and low-level competition/participation.

Competitive/training/fitness market – (20-30 percent of users) usually made up of people predominantly attending facilities alone for structured fitness or aquatic sport activities and competition.

Health and therapy market – (10 percent of users) usually made up of older adults and members of specialist health condition groups such as those with arthritis, asthma or mobility conditions. They require water with a higher temperature and facilities associated with health and relaxation, such as spa and hydrotherapy pools.

Research throughout New Zealand and overseas indicates that the recreation and leisure market will continue to be the largest as it contains people of all ages, abilities, types, interests and genders. The competitive/training/fitness area is a more specialist market generally containing younger, fitter and more active people who make time to train and compete.



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Concept

The Facility Planning Process

It is important that each of the eight steps is completed in sequence.

Steps 1-4 are components and tasks that reflect the **project proposal**.

Steps 5-8 are relevant to the **project development**.



1. Identify the need for the facility and develop a strategic business case.
2. Review the need in the wider context of the desired facility network.
3. Assess market dynamics, including demographics and changing sport and participant trends.



4. Critique and review key thinking.
5. Establish a fit for purpose and sustainable model – whole-of-life costing considerations.
6. Assess the functional and spatial requirements.
7. Governance, management and operational concepts considered for optimal and quality service provision.
8. Evaluate the success of the facility against planned outcomes and assess future plans.

Overall, the planning and concept development phase should answer the following questions:

- What are the key reasons for developing the facility?
- Who is the facility being built for?
- How do we know it is going to be used by those groups and individuals?
- Are there potential collaborators and partners?
- Is there potential for co-location or integration with other community facilities?
- Where is the best location?
- How is it going to be managed?
- How will the design/construction costs be met?
- How will the ongoing operational and development costs be met?
- How will it remain fit for purpose for the life of the facility?

A three-stage process is recommended, with the ability to review before proceeding to the next stage. The stages are:

1. Initial scoping and brief.
2. Needs assessment.
3. Feasibility.

As a guide, the needs assessment and feasibility stages of the planning process may take up to 5 percent of the total cost of development, but can determine up to 65 percent of the final building cost. They are worth doing, and doing well, in order to minimise future costs and investment.

Getting it right – common errors/assumptions include:

- Poor brief – leading to unclear expectations
- Lack of quality data to inform decisions
- Scope being either too broad or too narrow; not consulting or not getting the right people around the table
- Not having a clear project structure, including a project control group responsible for sign-off of key milestones.

Initial Scoping and Brief

A scoping exercise needs to be undertaken to define and frame the proposition at an outline level.

The scoping will provide the information needed for the preparation of the brief for the needs assessment and the feasibility study; often these two elements are undertaken as one study where there is reasonable certainty regarding the need for a facility. Independent planning consultants with relevant expertise and previous experience with this type of facility usually undertake these studies.

Needs Assessment

It is essential that a needs assessment (sometimes called a pre-feasibility study) be undertaken before embarking on a feasibility study. In short, this involves identifying any lack or over-supply of existing facilities and services. The aim of a needs assessment is to justify provision. It is only when the needs assessment has been completed that a feasibility study can be undertaken to assess the viability of any proposed facility development.

The following section draws from Chapter 4 Strategy and Planning of the *Facility Management Manual* and Chapter 8 Facility Development of the *Aquatic Facility Guidelines* developed by the New Zealand Recreation Association (NZRA) and Sport NZ.

A community sport and recreation facility aims to meet the needs of the community at an affordable cost. A facility's financial sustainability is also linked to how well it services existing and future sport and recreation needs. Initial clarity about the needs of the community that will be met by the facility, and the setting of clear objectives to reflect needs, are key ingredients for success. Understanding needs may involve: defining the facility catchment; undertaking a strategic view of community facilities in the long term in the area; and identifying what role the facility can play in addressing the need. It is important that the drivers for a facility in terms of community needs can be clearly articulated and, where possible, quantified.

A needs assessment identifies any lack or over-supply of existing facilities and services. The aim of the assessment is to prove (or disprove) need through evidence, separating desire from need.



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A thorough assessment of needs is fundamental to the success of the project. For local authorities, there is a statutory obligation to consult the affected community. For other facility developers, it is commercially astute to determine needs before investing significant funds.

The needs assessment would usually involve the following:

- Identify the current supply of facilities and the characteristics of the network (the proximity and functional capabilities and capacity of the other facilities)
- Define the catchment area and population
- Establish the key characteristics of the population
- Define the gap in facility provision
- Identify the current and projected needs for the project
- Establish the priority needs
- Identify options to meet the priority needs (redevelopment, reallocation of space and new facilities should all be considered)
- Refine the objectives of the facility
- Establish the activity and facility mix to meet the needs
- Define likely roles and responsibilities with stakeholders/collaborators/partners
- Identify location options from a strategic perspective
- Identify any parking requirements (refer to district plan)

If the needs assessment confirms there is a need as identified in the initial scoping, the next step is to undertake a feasibility study. In the unusual event that the needs assessment concludes there is no identified need, the feasibility study component would not proceed.

Care should be taken to be guided by real needs, as opposed to expressed wants, to avoid spiralling capital and operating costs that create excessive/unsustainable financial burdens.

Feasibility

It is important to acknowledge the two stages in the feasibility study process. The first stage develops the concept of the facility, while the second stage of the feasibility study tests the practicality of the concept. Ideally the two stages should be undertaken separately by independent parties to ensure impartial judgement and transparent processes.

To determine the meaning of success for the facility, the developer must identify what they want to achieve through their proposed facility. Setting objectives for the facility should also clearly determine the relative commercial and community focuses of the facility. Some facilities may have a greater focus on commercial success, while others may weight delivery on social objectives (social inclusion, health, participation, safety).

A feasibility study will assess the viability of the facility proposal. A good study provides an excellent guide to what will be developed for the capital investment and minimises or eliminates unanticipated surprises during construction and operation.

The feasibility study should:

- Formalise how the facility will meet the needs
- Refine and assess for each option the scope of the facility, technical requirements, costs, strengths, weaknesses, opportunities and threats (SWOT assessment), the potential return on investment, timeframes, resources required, governance and management models, risks and building on the activities and facility mix
- Assess locations for each option for the facility against agreed attributes, including the redevelopment of an existing facility
- Prepare a concept design(s) including preliminary costing
- Define the business case and business model
- Identify who could co-locate and/or partner
- Develop an area schedule of rooms and components for inclusion in the facility design brief.

Note: investment in a desk-top investigation of likely surface and sub-surface conditions (geotechnical, contaminated ground etc) as part of the site selection process is recommended.

Note: the concept design is flexible and will probably change. Do not spend time and money developing and discussing the alternative layouts at this stage. Once the proposal is deemed feasible, and has been approved, it will enter the design phase. It is then that the skills of a professional consultant design team will be utilised to develop a schematic design.

Business Case

In preparing the business case as part of the feasibility study, there are several key steps to include. They are:

- Confirm vision and objectives
- Confirm the purpose of the facility
- Specify the service offering required to meet community needs and ensure alignment with existing strategies and policies (eg, sport and recreation plans)
- Develop high-level concept design
- Undertake community consultation including mana whenua
- Specify the occupancy and throughput model
- Specify the pricing of services
- Generate an operational income and expenditure model over a 10-year period – include any known warranty maintenance cost requirements
- Identify and engage further with stakeholders and the community, potential operators, and seek ongoing feedback on design and operating models
- Define the ownership, governance, management and operating model, including the following:
 - a. Are other parties able to contribute to capital and/or operating costs?
 - b. Will the facility or programmes generate and maximise the percentage of use and occupancy?
 - c. Resourcing – are the right (governance, project management and operational) skills available?
 - d. Risk – identify and mitigate any ownership, financial, construction and ongoing operational risks

- Set principles for the design of the facility that address functionality, user experience, access and sustainability
 - Provide strategy for ongoing asset management
 - Identify funding opportunities and sources
 - Develop a framework for monitoring and evaluating the project
 - Develop an ongoing engagement strategy.
-

Needs assessment, feasibility and business case are the client's best insurance against a poor investment!

The Government Treasury website offers guidance on developing better business cases:
www.treasury.govt.nz/statesector/investmentmanagement/plan/bbc

Peer Review

It is desirable to undertake an independent review/assessment of the feasibility study, especially if considering a large-scale project. The review should be undertaken by an independent person(s) with relevant expertise and experience and should consider:

- **Rationale for the proposed facility**
Is the provision of the proposed facility the best way of meeting the community's needs for sport and recreation services? Have the merits of other feasible options been objectively considered?
- **Practicability of the draft business model**
Is the proposed approach workable, achievable and cost-effective? Does the business model target the findings of the market analysis?
- **Suitability of the concept design and location**
Does the proposed concept design and site accommodate the activity and facility mix in the best possible way? Within the design, have the most practical and energy-efficient technical systems been chosen? Does the building structure suit the climate?
- **Validity of the assumptions/projections included within the business case**
Are there risks concerning the assumptions upon which the usage and financial projections are based? Is the degree of risk significant? How can the risks be mitigated?



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- **Economic, environmental and social viability of the proposal**

What impact will the proposed facility have on external economic, environmental and social systems? Will the net effect benefit the community?

- **Recommendations**

Are the recommendations supported by the findings of the study?

The NZRA may be able to provide and assist with funding for the peer review of projects. Some criteria, and conditions exist so contact the NZRA for further information: www.nzrecreation.org.nz

Funding Agreements

The purpose of a funding agreement is:

- For organisations that are funding a project, to detail the terms and conditions of the investment, including how the investment may be used
- For parties to agree on other project matters related to the project, well before construction starts.

Where there are multiple funding partners, a funding agreement should be signed by the lead group (facility owner) and each individual funding partner (ie, a separate funding agreement for each organisation that provides funds).

The funding agreement should include what the grant/donation will cover (eg, consultants' fees, consent fees, technical works, site investigation fees, earthworks, construction, demolition of an old building to make way for a new building, interior fit-out). It is recommended that a cash flow forecast be included in a funding agreement so that each funding organisation knows when a grant payment is due. The cash flow forecast (to which all the funders agree) assists the project manager in budgeting for the project. It is usually prepared by the project manager.

A funding agreement should include a clause stating what funding is required in order for the project to start (eg, all funding required has been raised).

Memorandum of Understanding and/or Terms of Reference

A memorandum of understanding (MoU) provides the best opportunity to determine agreement as how a facility is to be owned and operated. It minimises the risk of misunderstandings or disagreements once the facility is constructed as parties are clearly aware of the roles, responsibilities and costs of operating the facility.

An MoU can be prepared and signed by all parties that will occupy the building. It is recommended that an MoU be signed before a funding agreement is signed.

Further Guidance on Facility Mix and Location

This section provides further information on some key aspects for consideration during the initial scoping, needs assessment and feasibility study phases.

Facility Mix

To develop the preliminary facility mix, first identify the various facility components, ie, the different spaces/functional areas needed within the main structure. Information on what facility components will be the most appropriate can be ascertained from:

- Discussions with proposed users/tenants
- Visits to similar facilities where the community is of a similar size and demographic
- Discussions with facility managers, design consultants and sport or recreation planners and industry bodies (ie, Sport NZ and the NZRA).

Outline the specific components of the facility:

- Describe the primary activity spaces required
- Identify the secondary and support areas to be accommodated, ie, carpark, viewing areas, reception/foyer areas, ablutions, café, sports shop, kitchen, crèche, operational plant rooms and equipment storerooms etc
- Define the functional requirements of each area, ie, rough dimensions and capacity requirements (based on estimated usage), major items of furniture and equipment to be accommodated, types of floor surface, storage space requirements and mechanical services etc
- Define the important interrelationships between activity areas and indicate where activity areas need to be adjacent (consider flow of internal traffic, supervision requirements and potential for multi-skilling of staff).

Bubble diagrams may be used to provide a graphic illustration. The above information should provide sufficient detail to enable a cost planner/quantity surveyor to estimate the 'ballpark' capital cost of the proposal.

Facility Options – Illustrative Models

The table below has three illustrative models of tightly designed community sport and recreation facilities of differing scales. The three models illustrate differing contexts that influence the facility needed as described earlier, such as the catchment population being served and the gap in the regional or local network that will be filled by the facility. Accordingly, the scope of the activity mix varies for all three models. The small facility model is designed to provide a minimum level of core functions. The medium facility model adds more lanes to the lap pool and a fitness centre. The large facility model has additional aquatic provision and a larger fitness centre. The sizes of the components are based on the aspirational Sport NZ percentage space allocations suggested in the table below and illustrate that a small range of divergence from these values is expected when planning a facility.

Remember, the concept design is flexible and will probably change. Do not spend time and money developing and discussing alternative layouts at this stage. Once the proposal is deemed feasible, and has been approved, it will enter the design phase. It is then that the skills of a professional consultant design team will be utilised to develop a schematic design.

Care should be taken to be guided by real needs, as opposed to expressed wants, to avoid spiralling capital and operating costs that create excessive/unsustainable financial burdens.

FACILITY MODEL: SMALL/MEDIUM/LARGE FACILITY			
OPTION NAME	SMALL FACILITY	MEDIUM FACILITY (REFERENCE FACILITY)	LARGE FACILITY
Description	<ul style="list-style-type: none"> • 1 netball court • Fitness centre • Aquatic centre with: <ul style="list-style-type: none"> - Combined learn to swim (LTS) and leisure pool - Toddlers' pool - Family spa - 4-lane main pool 	<ul style="list-style-type: none"> • 1 netball court • Fitness centre • Aquatic centre with: <ul style="list-style-type: none"> - Combined LTS and leisure pool - Toddlers' pool - Family spa - 8-lane main pool 	<ul style="list-style-type: none"> • 3 netball courts • Fitness centre • Retail/allied health • Spectator seating to event court (1,000+ person) • Aquatic centre with: <ul style="list-style-type: none"> - Toddlers' pool - Family spa - Water slides - 8-lane main pool
Diagram (refer to appendix for plan)			



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FACILITY MODEL: SMALL/MEDIUM/LARGE FACILITY								
OPTION NAME		SMALL FACILITY		MEDIUM FACILITY (REFERENCE FACILITY)		LARGE FACILITY		
METRICS	%	AREA	%	AREA	%	AREA	%	
1	Core sporting areas	70	1,920	72	2,600	69.9	4,780	67.6
a	Courts		900		900		2,425	
b	Pool hall		870		1,400		1,905	
c	Fitness centre		150		300		450	
2	Essential supporting areas (storage and changing)	13	340	12.7	456	12.3	890	12.6
3	Foyer/circulation/public WCs	6	152	5.7	220	5.9	327	4.6
4	Internal plant areas	5	132	4.8	215	5.8	345	4.9
5	Core management areas (reception/staff areas)	3	77	2.8	98	2.6	134	2
6	Other areas (café and spectator seating)	3	49	2	131	3.5	589	8.3
a	Café/vending		15		60		60	
b	Spectator seating		0		0		145	
c	Retail/wellness		0		7		305	
Total ground floor area (m²)		100 %	2,670		3,720		7,065	
Carparking			50		100		200	
Capital cost range			\$10,680,000		\$15,953,000		\$28,260,000	
Operating net cost range per annum			\$1,465,000		\$1,711,000		\$2,195,000	
Typical catchment			<10,000		10,000-50,000		>100,000	

Notes:

Costs are based on the assumptions and exclusions outlined in the relevant Build (stage 4) and Operate (stage 5) stages.

Carparking number requirements are indicative only and will vary depending on site location, local council requirements and facility mix type.

The facility mix is used to develop an area schedule that should be included in the facility design brief when procuring a consultant team.

Location Rationale

Consider whether existing facilities could be extended or upgraded for use on a shared basis.

If this is not possible and a new facility is required, you should plan, in consultation with other facility providers, to ensure minimum duplication and maximum use of resources.

Consider the possibility of co-locating the proposed facility with other community or commercial facilities. If properly integrated, this approach can work to create a 'hub' within your community, centralising facilities in a village concept. Co-location with other major providers will maximise service and social outcomes and provide opportunities to reduce capital and operating costs.

Discuss your proposal with the Ministry of Education and local schools and/or tertiary education facilities, local sports groups, commercial organisations, and neighbouring local and regional authorities to explore opportunities to co-locate and share the provision and/or use of facilities.

Site Suitability

Usually location, availability and cost will dictate the choice of site. However, when looking at a site for a sport and recreation facility, considerations include:

- Zoning regulations and local authority planning rules and restrictions
- Ownership of the land and cost to purchase or lease the site
- Historical value or heritage significance
- Any bearing on Treaty of Waitangi settlement legislation or issues of importance to Māori
- Accessibility for pedestrians, cyclists, motor vehicles and public transport
- Visibility of site

- Social impact – opportunities for integration with community and commercial facilities
- Proximity to the catchment area and potential user groups
- Size – provision for carparking and potential for future expansion of facility or addition of other facilities
- Existing structures and their usage
- Surface and sub-surface conditions (geotechnical, contaminated ground)
- Environmental considerations.

Space Allocations

Sport NZ has undertaken some benchmarking analysis of the percentage of floor area devoted to the various essential functions in community sport and recreation facilities in New Zealand. The allocations in the table below have been informed by the benchmark exercise of existing sports facilities in this country, balanced with aspirations to improve the function and affordability of these facilities. Refer to Stage 6 Improve for details on the benchmarking.

The percentage allocations below are designed to inform the proportion of core sport and recreation, support, circulation, plant and staff accommodation areas. These allocations are indicative only and should be used to test the facility brief and area schedule. The allocations are intended to be used as an aspirational guide. A specific design of a facility is required using the needs analysis and design guidance (Design section) and relevant New Zealand standards, the New Zealand Building Code and best-practice notes to fully inform a facility brief area schedule.

The guideline percentages in the table below reflect the aspiration to maximise the area allocated for sport and recreation activities in a tightly-designed facility. However, it is critical to understand that a sufficiency of allocation for supporting areas such as storage will impact on the operational effectiveness and efficiency of the facility.



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Sport NZ % Space Allocation

METRICS		SPORT NZ % VALUES
1	Core sport and recreation activity areas	70%
2	Essential supporting areas	13%
3	Foyer/circulation/public WCs	6%
4	Internal plant areas	5%
5	Core management areas	3%
6	Other areas	3%

Planning

The space planning and layout of the building will be informed by and based on the facility brief, master plan and investment objectives. In the context of a community facility the building should also meet best-practice urban and master planning design principles. The building design should address the following key design principles:

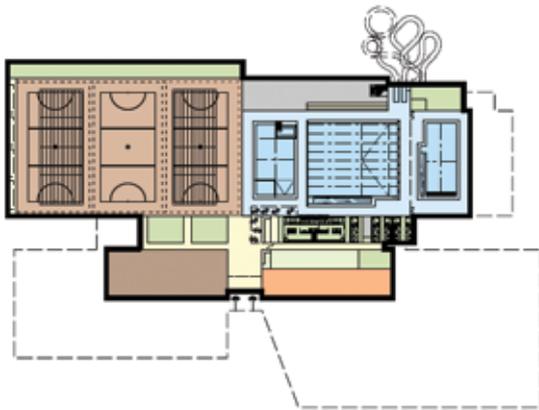
- Intuitive wayfinding – the facility should be planned in a clear and logical way. The wayfinding, entry and change processes should be intuitive to use
- Visible sporting activity – the sporting activities: fitness, swimming, leisure and ball sports should be visible and on display, both internally and external to the facility. Visually connecting the sporting communities encourages participation

- Efficiency – a logical and modular facility is a cost-effective facility. The design should maximise functional, construction and operational efficiencies
- Sustainable – a flexible and adaptable facility that can re-invent itself to cater to changing needs is a sustainable facility.

The table below describes two example planning diagrams and how they respond to the design principles noted above.

Planning Diagrams

LINEAR MODEL



LEGIBLE AND INTUITIVE

A human-scale front-of-house building block contains all the public functions: entry, foyer, reception and change processes. The entry sequence is clearly visible from the approach and once inside the foyer the change process and visibility of the sports facilities allow intuitive wayfinding.

ACTIVE AND PERMEABLE

The fitness centre, sports courts and pool hall are all visible from the main foyer, reception and seating area. The fitness centre activates the main entry and is visible from outside the building, promoting participation by the external community.

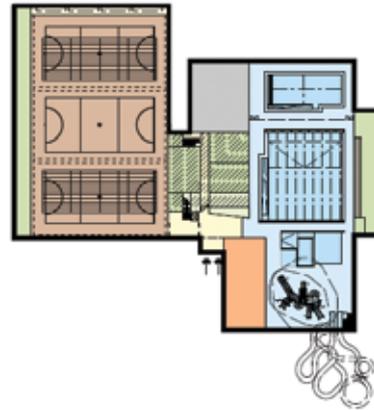
EFFICIENT

The separation of structural systems maximises the efficiency of the build. The open-plan pool hall, with no concealed corners, minimises lifeguarding supervision. The central reception desk provides secondary supervision of the pool hall. Service and public access are clearly separated.

SUSTAINABLE

A central hub and circulation spine allows the logical expansion of sports courts, pool hall, plant, storage, change rooms and fitness centre with minimal disruption. The diagram allows large unknown sporting functions, such as gymnastics or an ice rink, to adjoin and complement the facility over time.

COMPACT MODEL



LEGIBLE AND INTUITIVE

The compact model sandwiches the public face of the facility between the two key sporting areas. The fitness centre is typically located on the upper floor to overlook the pool hall. The entry and change sequence is clear and intuitive.

ACTIVE AND PERMEABLE

The sports courts and pool hall are visible from the main foyer and reception. A two-storey entrance foyer would provide visual connections to the first-floor fitness centre. The leisure water and hydroslide are highly visible, promoting participation by the external community.

EFFICIENT

The open-plan pool hall, with no concealed corners, minimises lifeguarding supervision. The central reception desk can provide secondary supervision of the pool hall. Service and public access are separated.

SUSTAINABLE

This model allows the potential for change room 'buffering', to share use between the pool hall and courts depending on demand. However, land locking the support functions in the centre limits the ability to expand these in future. Careful consideration of the final scale of the facility is therefore needed to ensure adequate change rooms are provided initially.

Note: the planning diagrams above are generic and make no account for any site-specific factors.



STAGE 1: CONCEPT

Linear Facility Model Functional Capability: Small/Medium/Large Facility

The table below provides a summary of the capability of each facility and illustrates the compromises and trade-offs between the three differing scales (and costs) of provision.

Summary of Capability of Small/Medium/Large Facility Options

FACILITY MODEL	SMALL FACILITY	MEDIUM FACILITY	LARGE FACILITY
CAPABILITY	4-LANE POOL (25X10M, DEPTH 1.2-1.8M)	8-LANE POOL (25X20M, DEPTH 1.2-1.8M)	8-LANE POOL (25X20M, DEPTH 1.2-1.8M)
Mixed use	POSSIBLE but very limited ability to have mixed use of pool. Greater risk of scheduling conflict, particularly with swimming club squad training, so alternative scheduling scenarios may be needed	YES can have mix of lanes allocated for different concurrent users (eg, public lap swimmers and club squad)	YES can have mix of lanes allocated for different concurrent users (eg, public lap swimmers and club squad)
Learn to swim (LTS)	YES suitable for older-aged children	YES suitable for older-aged children	YES suitable for older-aged children
Exercise and fitness lap swimming	YES but lower number of swimmers in water at any one time	YES	YES
Exercise classes	YES but lower number of swimmers in water at any one time	YES	YES
Water play	YES but smaller-scale inflatable apparatus due to smaller pool	YES	YES
Swim squad training	YES but lower number of squad members in water at any one time, 6-10 per lane, 24-40 in squad	YES	YES
Intra-club swimming competition events	POSSIBLE but highly modified event compared with 8-lane pool event, split heats, longer duration to deliver the event or limit number of competitors	YES	YES
Inter-club swimming competition events	HIGHLY UNLIKELY as throughput capacity too low to be viable plus spectator capacity issue	YES could be fitted out to be FINA-compliant	YES could be fitted out to be FINA-compliant
Underwater hockey and water polo and flippa ball training	YES but limited number participating at any one time because of very limited area of 1.8m depth water (25m ²)	YES	YES

FACILITY MODEL	SMALL FACILITY	MEDIUM FACILITY	LARGE FACILITY
CAPABILITY	4-LANE POOL (25X10M, DEPTH 1.2-1.8M)	8-LANE POOL (25X20M, DEPTH 1.2-1.8M)	8-LANE POOL (25X20M, DEPTH 1.2-1.8M)
Underwater hockey and water polo and flippa ball games	POSSIBLE but highly modified	YES but not full-size field of play	YES but not full-size field of play
Canoe polo training	YES but limited	YES	YES
Canoe polo games	POSSIBLE but highly modified	YES	YES
CAPABILITY	PROGRAMMED POOL (SMALL LEISURE AND LEARNER COMBINED POOL) (11.7X7M)	PROGRAMMED POOL (MEDIUM LEISURE AND LEARNER COMBINED POOL) (20X10M)	LEISURE POOL (20X10M)
LTS	YES but limited capacity for pre-school and primary-school-aged children	YES suitable for pre-school and primary-school-aged children	YES work in tandem with dedicated learners' pool, suitable for pre-school and primary-school-aged children
Pre-school depth water	YES separated area (12m ²) providing toddlers' pool	YES	YES
Zero beach entry	YES the floor is sloping at a gradient of 1 in 15 for the first 4.5m (to 0.3m depth) then 1 in 12 for the remainder to the deep end (maximum 0.9m)	YES separate beach entry (depths: 0.35d to 1.0d)	YES separate beach entry (depths: 0.35d to 1.0d)
Spa pool	NOT INCLUDED	YES 15 adult capacity	YES 15 adult capacity
CAPABILITY	SEE COMBINED POOL ABOVE	SEE COMBINED POOL ABOVE	LTS POOL
LTS	NO a dedicated learners' pool is not included	NO a dedicated learners' pool is not included	YES a dedicated pool suitable for primary-school-aged children
CAPABILITY	SINGLE INDOOR SPORTS COURT (900M ²)	SINGLE INDOOR SPORTS COURT (900M ²)	SINGLE INDOOR SPORTS COURT (900M ²)
Most court sports	Community-level play. Compliant with netball clear floor area of 3.05m run-off. Modified futsal playing area. 7.5m clear height	Compliant with netball clear floor area for 3.05m run-off. Modified futsal playing area. 7.5m clear height	Compliant with netball clear floor area for 3.05m run-off. Modified futsal playing area. 9m clear height
Natural diffused light to reduce energy requirements	Impacts particularly on badminton and to lesser degree on volleyball	Impacts particularly on badminton and to lesser degree on volleyball	Impacts particularly on badminton and to lesser degree on volleyball
Spectator seating	LIMITED with single rank of seating for players, officials and spectators along one wall	LIMITED with single rank of seating for players, officials and spectators along one wall	LIMITED with single rank of seating for players, officials and spectators along one wall



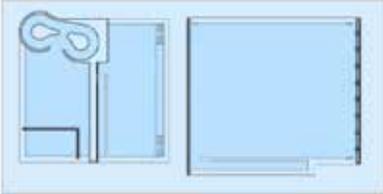
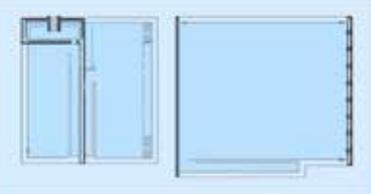
STAGE 1: CONCEPT

FACILITY MODEL	SMALL FACILITY	MEDIUM FACILITY	LARGE FACILITY
CAPABILITY	4-LANE POOL (25X10M, DEPTH 1.2-1.8M)	8-LANE POOL (25X20M, DEPTH 1.2-1.8M)	8-LANE POOL (25X20M, DEPTH 1.2-1.8M)
CAPABILITY	FITNESS	FITNESS (300M ²)	FITNESS (450M ²)
Space for machines and weights	NO	Substantial area for 50 exercise stations (based on 5m ² per station)	Larger area for 75 exercise stations (based on 5m ² per station)
Group classes	No dedicated space – use indoor court for group classes	Separated 65m ² space, could be multi-purpose at times	Separated 65m ² space, could be multi-purpose at times

Options for Different Target Markets

The table below provides a brief summary of three illustrative options to demonstrate how the same water area could be allocated to meet the needs of three different target markets. The selection of the type of pool would reflect the findings of the needs analysis regarding the predominant users.

Identify the Target Markets (Who Will be the Predominant Users?)

MOSTLY FAMILIES	MOSTLY RETIREES	MOSTLY ELITE ATHLETES
<p>Brief Scenario A</p> <ul style="list-style-type: none"> • 25m lap pool (8-lane) • LTS pool • Leisure water • Toddlers' pool 	<p>Brief Scenario B</p> <ul style="list-style-type: none"> • 25m lap pool (8-lane) • LTS pool • Warm water pool • Separate spa pool 	<p>Brief Scenario C</p> <ul style="list-style-type: none"> • 50m lap pool (8-lane) • Movable floor to cater to LTS
		
<p>Typical future expansion (in order of typical priority):</p> <ol style="list-style-type: none"> 1. Spa pool 2. Warm water pool 3. Hydroslides 	<p>Typical future expansion (in order of typical priority):</p> <ol style="list-style-type: none"> 1. Leisure 	<p>Typical future expansion (in order of typical priority):</p> <ol style="list-style-type: none"> 1. Dedicated LTS pool 2. Leisure water 3. Warm water pool
<p>Commentary:</p> <p>Leisure water shown is complemented with a lazy river, but consideration should also be given to other forms such as zero-depth waterplay and plug-'n'-play water toys. This is the typical mix for community-focused pools around NZ as it caters to a large demographic with an important focus on children (leisure) and LTS. A multitude of programmes (ie, LTS, leisure and lap swimming) can occur simultaneously in this scenario</p>	<p>Commentary:</p> <p>This would be an atypical facility mix. It is unusual to prioritise a warm-water pool at the expense of leisure water</p>	<p>Commentary:</p> <p>This is also an atypical facility mix. It serves to illustrate the point that a 50m pool will take up the same footprint as Brief Scenario A, which caters to a much wider market</p> <p>The programming of concurrent classes is compromised in this scenario. For example, an LTS class that requires a water depth of 700mm cannot be programmed at the same time as an aquafit programme or competition</p>
<p>Relevant NZ example: <i>Caroline Bay Trust Aoraki Centre– Timaru</i></p>	<p>Relevant NZ example: <i>Keith Spry Pool Wellington</i> recently added leisure space and warm water programmes pool to its existing 25m lap pool, dive pool and learners' pool</p>	<p>Relevant NZ example: <i>AUT Millennium – Auckland</i></p>