

10. 9. 99

**REPORT OF THE LEISURE MANAGER AND
MAJOR PROJECTS CO-ORDINATOR**

**1. QUEEN ELIZABETH II POOLS REDEVELOPMENT
SCOPE OF PROJECT/THERMAL ENERGY SOURCE**

RR 10661

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The purpose of this report is to seek re-confirmation by the Council of the scope of the project and to consider the thermal energy source for both the QEII Pools Redevelopment and the Christchurch Art Gallery projects.

PART A – SCOPE OF PROJECT

1. INTRODUCTION

The Council, at its meeting held on 25 March 1999, approved the tender from Naylor Love Canterbury for the stadium grandstand reroofing.

The Concept Design Report prepared by the Project Team was adopted by the Council on 24 June 1999. The Council also approved preparation of contract documentation (working drawings, Specifications and Schedule of Quantities) and the calling of tenders.

At its 23 July 1999 meeting to consider the report of the Annual Plan Working Party, the Council resolved that the financial provision for the project should be confirmed, but that a special Council meeting should be held to decide on the final form of the development.

Design development and tender documentation is over 90% complete as at 13 August 1999. Any change to the scope of the project will result in additional redocumentation costs and a delay in the project programme.

2. CURRENT SCOPE OF PROJECT

(Refer attached floor plan.)

The current scope of the project includes:

- New 51 metre, 2 metre deep, ten lane international standard swimming pool complete with a moveable bulkhead
- Pool enclosure building and sun deck
- Pool storage area
- Leisure pool with wave machine (in existing 50 metre pool area)

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- Mezzanine space above the leisure pool (for future development)
- Teach Pool
- Two whirlpools
- Sauna and steam room
- Central control and circulation core with lift
- Changing rooms
- Entry foyer (beyond existing refurbished entry)
- Air handling and water treatment plant
- Mechanical plant room and boiler house
- Roof replacement over both the pool and stadium
- Major maintenance items identified in the Conditions /Options Report
- Removal of the existing hydroslide

3. MAINTENANCE UPGRADING

The Council engaged a small team of consultants who undertook inspections in late 1997 and produced the QEII Conditions/Options report in January 1998.

QEII pool and main stand were built specifically for the 1974 Commonwealth Games. Construction was carried out at high speed in order to complete the facility on time.

The speed of construction and resulting poor quality of finish, combined with a lack of maintenance over an extended period of time, have resulted in a building which is currently in a poor state of repair.

The roof system is presently constructed of long-run metal decking, 50mm fibreglass and a polythene vapour barrier on plywood sarking. As a result of the failure of the polythene, moisture has been allowed to condense on the underside of the metal decking thereby saturating the fibreglass and destroying its chemical insulation resistance. Condensation has also corroded the roof cladding and the structure and services below it.

The reduction in thermal resistance of the building envelope has greatly increased the winter-time heat loss resulting in increased energy consumption.

Following recent inspections, items of risk to public health and safety have been temporarily attended to but now require urgent action. An example of such items is the clerestory windows.

The current project provides for upgrading to comply with the necessary statutory requirements.

The estimated cost of the maintenance upgrading to the existing building is \$11.1m. **This work is considered essential and cannot be deferred any longer.**

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4. NEW INITIATIVES

The Design Brief calls for facilities which anticipate demands and expectations of customers into the next century.

It is important that QEII provides facilities to meet this objective and add to the aquatic entertainment and training opportunities for Christchurch residents and visitors to our city.

There are three new initiatives in the current project:

(a) **New 51 Metre, 10 Lane Competition Pool**

A new pool enclosure building will be constructed to the east of the existing 50 metre pool. A new 51 metre, 10 lane international standard pool will be provided to replace the existing 50 metre, 8 lane pool which has a varying depth. The new pool will have a uniform depth of 2 metres and will contain a 1 metre wide moveable bulkhead. (By shifting the position of the bulkhead, a 50 metre long or two 25 metre long pools can be provided.)

Alan Direen, QEII Manager, comments as follows:

“There are clear operational benefits from having a 25m wide pool with a uniform depth allowing aquajogging and water polo to share the pool with competition swimming and training.

Aquatic sports in Christchurch will benefit markedly by having a sports specific facility at QEII Park. The adjacent leisure pool will allow the aquatic sports facilities to be used at all times for the purposes they were intended for.

A 25m wide pool allows the pool to be divided into four sections. Water polo, lap swimming, aquajogging and underwater hockey could share that pool at the one time.

National events can be held in an 8 lane pool, as can some international events with dispensation. Increasingly though, Christchurch will fail to gain major events of any kind if we do not build a 10 lane, 50 metre pool of uniform depth.

Where other cities within New Zealand can provide 10 lane facilities, they will be preferred to Christchurch for events such as our national championships.

The economic impact of events such as the World IPC Games, the SuperGames, New Zealand Swimming Championships and the World Wheelchair Games far outweighs the additional cost of building an extra two lanes.”

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The new 51 metre pool will be constructed first and will ensure that a 50 metre water space is retained throughout the project. The alternative is to close the existing 50 metre pool for up to 12 months and construct the new pool in its existing position. This would mean that aquatic sports in Christchurch would not have a 50 metre pool during that period. Christchurch is already desperately short of waterspace for lap swimming, swim training, aquajogging, water polo and canoe polo.

(b) New Leisure Pool Complex

The existing 50 metre pool will be removed and be replaced with a new Teach Pool and leisure pool including lazy river, wave machine, two vortexes, bubble seat, geyser, raindrop unit, two swirlpools, sauna and steam rooms.

Alan Direen comments:

“QEII Park’s Pool Redevelopment is part of an aquatic redevelopment plan for Christchurch. Centennial and Pioneer Pools were intended only as smaller suburban redevelopments.

Christchurch has only just begun its journey down the aquatic leisure pathway. Pioneer and Centennial are both exceeding expectations at this early stage. We have yet to experience summer conditions which will inevitably turn customers to a “swimming” way of thinking.

Overseas experience tells us that the leisure experience is certainly not short lived.

Leisure pools are well tested, they are successful and are a vital component of the direction aquatic facilities are moving in. The “Leisure Concept” is becoming the “Lifestyle Concept.” QEII’s leisure pool will combine with existing sporting, recreational and customer focused services and facilities to become an outstanding Lifestyle Centre.

It is important for Councillors to recognise that QEII Park is not just an aquatic facility.

The leisure development stage follows upon completion of the 10 lane pool. The positive economic impact of the leisure pool will become apparent through 2002 and 2003.”

The hydroslide building is in need of replacement and the hydroslide is leaking and has high maintenance costs.

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Alan Direen comments further:

“The hydroslide is a “fun activity.” However, it is tired and needs to be replaced. That replacement was never part of the Pools Redevelopment Brief.

Originally, the hydroslide was built and operated by private enterprise. The Council purchased the operation at a later date. That scenario could be repeated. Private enterprise could build and operate a facility attached to the leisure pool area in much the same way as we currently operate, that is with a separate charge for the slide. The question remains, should the slide be smaller than the existing facility, part of the leisure pool with the entry charge built into the pools admission price or should it be a separate, larger destination of say 4–6 slides with a charge over and above the leisure pool entry charge.

It is important to note that a new slide facility has not been forgotten. The configuration, ownership and funding should be the subject of further study.”

The existing Learners' Pool will be removed and replaced with the new Teach Pool. The existing pool's location (separate from the Main Pool Hall) is not ideal and there are a number of problems with it – the water treatment system is sub-standard, the HVAC system is in poor condition and is undersized, and the concrete base of the pool needs repairing.

The location of the new Teach Pool within the Main Pool Hall is closer to the other aquatic facilities and will be far better for customers and staff.

(c) New Mezzanine Floor

The project includes a 2,810m² mezzanine floor constructed over the new leisure pool. The floor also provides the ceiling over the leisure pool, thereby lessening the Main Pool Hall's HVAC requirements due to the reduced volume of the space.

As a comparison, the court area at Pioneer Stadium is 2,240m².

The mezzanine floor will be left undeveloped i.e it will not be fitted out and will have no HVAC system.

Rawlinson & Co, the Project Quantity Surveyor/Cost Consultant, have calculated that the additional net cost of including the mezzanine floor in the project is \$990,000.

Deloitte Touche Tohmatsu have reviewed the benefits of providing a mezzanine floor above the leisure pool complex. Their findings are reported in “Review of QEII Proposed Mezzanine Floor” completed in July 1999.

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Deloitte Touche Tohmatsu found that the mezzanine floor would provide additional space for future expansion. Upon development, significant operational savings would be gained in comparison to a stand-alone stadium. Further, the inclusion of a mezzanine floor would allow QEII to be developed to its full potential and would provide a facility with the widest range of sporting options available at any stadium in New Zealand.

Deloitte Touche Tohmatsu found that the following matters should be taken into consideration:

- “1. *There is no substantial court area in close proximity to QEII, the closest being Cowles Stadium which is a relatively old building.*
2. *There will be no future opportunity to include a mezzanine floor without carrying out major alterations.*
3. *If QEII is to attract sporting academies, it must be able to provide for alternative training during times of inclement weather. A significant court area would meet this requirement.*
4. *The inclusion of the floor allows efficient use of the existing available space and better utilisation of the management, administration and operational functions.*
5. *The floor will allow for future expansion and will provide the flexibility to respond to changes in recreational activities.*
6. *The addition of the floor would provide the opportunity to have a true, multi-purpose training, recreational and entertainment complex well suited to both families and various sporting codes.*
7. *If national sporting academies are attracted to QEII, there will be indirect economic benefits to the city in terms of additional spending and enhanced city profile.”*

Alan Direen comments:

“Uses for the Mezzanine Floor

The floor space provided by the mezzanine floor could be configured and used in a variety of ways. Existing gymnasiums, medical facilities and administrative functions could be moved onto the mezzanine thereby increasing space available for more commercially-orientated applications which might include corporate facilities, entertainment facilities and food and retail outlets. Multiplex cinema operators have also expressed interest in the Pools Redevelopment project.

The mezzanine floor itself could be configured to house the following:

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- Sports Courts - indoor basketball*
- *netball*
 - *indoor tennis*
 - *badminton*
 - *other indoor sports*

Depending upon the configuration, one to three courts could be accommodated with the added advantage that existing seating at the higher level over the original 50 metre pool could be retained for spectator viewing, thus offering a small events centre ideal for selected events.

- *Gymnasiums and/or weight training*
- *Aerobics and circuit rooms*
- *Sports medicine/physiotherapy rooms*
- *Meeting and function rooms*
- *Management and administration rooms*
- *Multiplex cinemas*
- *Sports Training Centre*

QEII Park is currently home to 150 tertiary students from the Sports Performance Institute of Canterbury and the Aranui Sports Academy. Numbers are expected to increase to 180 –200 students in the year 2000.

The New Zealand Sports Foundation is about to call for bids on a regional basis, to establish Regional Training Centres throughout New Zealand, in a manner similar to Australia's Institute of Sport. Though Christchurch is not guaranteed of selection, QEII Park is an ideal location to base a Canterbury and South Island bid. It is vital that Christchurch be selected as one of the preferred centres. A Trust has been established and is working towards making that bid a reality. In the event that the bid is unsuccessful, those involved in making the bid are determined to proceed with their plan. Once fitted out, a mezzanine floor within the QEII facility would become a vital operational part of these sporting academies.

Clearly, sports training is a growth area and QEII Park has a vital role to play within our region, such are the facilities available at the complex.

It is envisaged that fit out costs could be met by sponsorship, leaseholders, education providers and/or commercial partners. Previous developments such as the High Performance Gymnastics Centre and Golf Driving Range were funded by the developers. Christchurch residents and the Council benefit from these facilities at no cost to the ratepayers. Completion of the QEII Park Pools Redevelopment Project will ensure that QEII Park is regarded as an attractive proposition for interested parties.

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COST SUMMARY

Deloitte Touche Tohmatsu found that the difference in cost when comparing the mezzanine floor at QEII with a stand-alone stadium were as follows:

	QEII Mezzanine Floor	Stand-alone Stadium
Total capital cost (excluding fit out)	\$1,005,000	\$1,508,500
Total Annual Operating Costs	\$30,000/annum	\$210,000/annum

Additional Revenue

Deloitte Touche Tohmatsu have reviewed the operating budgets and discussed actual revenue with the Manager of Pioneer Stadium. They have also had discussions with the National Operations Manager of Hoyts Cinemas. It is difficult to predict the additional revenue that can be generated while there is uncertainty as to the final utilisation of the additional space and the commercial operations made possible by the inclusion of the mezzanine floor. However, there should be the ability to generate additional revenue of at least \$200,000 per annum and considerably more if the right commercial activities are incorporated into the complex.

Deloitte Touche Tohmatsu found that the additional net revenue that could be generated as a result of including a mezzanine floor is:

	\$	\$
Additional Revenue		200,000
Additional Operating Costs		
Staff remuneration	30,000	
Depreciation (\$2m (including fitout) over 50 years)	40,000	
Other say	30,000	100,000
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Additional Net Revenue		\$100,000

Conclusion

The incorporation of the mezzanine floor within the QEII Park Pool's Redevelopment Project is all about opportunity. Final configuration and usage of the area would be subject to Council approval. There are too many opportunities existing, and it is too early in the project, to determine final configuration. Also, it is too early to determine how the fit out of this area should be funded. Recreation, sport, leisure, entertainment and retail are all areas of opportunity for the mezzanine floor. Those who stand to benefit from the existence of the floor could pay the cost of its fit out.

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Whilst the funding saved from excluding the floor could be well utilised elsewhere within the Project, the opportunity will not come again to add 2,810 square metres to the QEII Complex.”

5. OPERATIONAL COSTS

(a) Total Operational Gain

Alan Direen reports that the estimated changes to operational costs due to the provision of a new 10 lane 51 metre competition pool and a leisure pool are as follows:

OPERATING EXPENDITURE	Current Costs (excl. new 51m & leisure pools)	Proposed Costs (incl. new 51m & leisure pools)	Variance
Staffing costs (lifeguards, cleaning)	(\$507,900)	(\$890,900)	(\$383,000)
Other costs (ACC/superannuation, uniforms, training, water treatment, cleaning materials, energy, hygiene)	(\$400,270)	(\$471,270)	(\$71,000)
TOTAL EXPENDITURE (PER ANNUM)	(\$908,170)	(\$1,362,170)	(\$454,000)
REVENUE			
800,000 estimated customers (1997/98 405,000 customers)	\$816,100	\$2,101,100	\$1,285,000
TOTAL OPERATIONAL GAIN (PER ANNUM)	(\$92,070)	\$738,930	\$831,000

Note: These figures do not include for any potential revenue gains from the mezzanine floor or from other parts of the QEII operation e.g gymnasiums, aerobics, swim school, learn to swim etc, or for any additional revenue.

(b) Depreciation and Debt Servicing

Additional depreciation and debt servicing on the full project adds an estimated additional cost of \$1.98m per annum.

However a large part of this cost relates to the \$11.1m of essential maintenance upgrading. The costs relating to the new initiatives are estimated as follows:

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(i) 51 metre competition pool and leisure pool	
Additional depreciation	\$312,000
Additional debt servicing	\$508,000
	\$820,000

Note: This estimated additional cost of \$820,000 for depreciation and debt servicing compares with an estimated total operational gain of \$831,000.

(ii) Mezzanine floor (excluding fitout)	
Additional depreciation	\$33,000
Additional debt servicing	\$59,000
	\$92,000

6. COST PLAN AND BUDGET

The project can be broken down into two major items:

(a) Maintenance work to the existing building (as identified in the Conditions/Options Report) including fire safety upgrade	approx	\$11.1m
(b) New construction – new 51 metre competition pool, leisure pool and mezzanine floor	approx	\$9.45m
		\$20.55m

The \$11.1m of maintenance work is considered essential and cannot be deferred any longer.

The need for the new construction is discussed separately in this report.

Total budget provisions in the 1999/2000 Council Plan for the project amount to \$20,557,850.

The current Project Cost Plan is as follows:

	Budget
1. Construction contracts	
(a) Stadium re-roofing contract (already completed)	\$610,000
(b) Main building contract	\$15,920,289
2. Professional Fees	\$2,652,985
3. Miscellaneous Expenses (including Major Projects Co-ordination Unit fees)	\$300,000
4. Contingency	\$1,074,576
	\$20,557,850

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Rawlinson & Co Ltd, the Quantity Surveyor/Cost Consultant, have reviewed the current drawings and advise that the project is on budget.

Payments up to 31 August 1999 on the project are as follows:

Grandstand re-roofing (Naylor Love Canterbury)	\$603,723.00
Consultants/Major Projects Co-ordination Unit	\$1,264,770.32
Miscellaneous consents etc	\$2,164.48
TOTAL EXPENDITURE TO 31/8/99 (GST exclusive)	\$1,870,657.80

7. EXCLUSIONS

The Project Team recognised that all new work and outstanding maintenance items identified in the Conditions/Options Report could not be undertaken for the available budget.

The items were therefore prioritised at a Value Management Workshop to determine the items which were considered to be the most essential.

The remaining new and maintenance work will be carried out under the QEII operational budget or will be included through future Council Plan processes.

Items which have currently been excluded are as follows:

1. Relining the grandstand soffit including lighting, and new stadium lighting
2. Replacing the dive pool HVAC installation and lighting
3. Seating to the new 51 metre pool
4. Maintenance to the existing water treatment plant to the dive and training pools
5. Additional fire protection maintenance work elsewhere in the building
6. Miscellaneous minor structural items identified in the Holmes Consulting structural report (January 1999)
7. Repairs and sealing to main stadium bleacher seating
8. Additional car parking (83 No.)
9. Landscaping – will be provided from the existing QEII operational budget
10. Furniture, Fittings & Equipment (including timing systems) – existing items will be reused

The above items are currently excluded from the project. If a low tender price is received or there is remaining Contingency available at the completion of the current project, the items will be prioritised and recommendations will be made to the Projects and Property Committee on carrying out some/all of the work from the existing Budget.

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8. FUTURE WORK EXCLUSIONS

The following future work is excluded from the project:

1. Upgrading of Team Change and Staff Change areas, extension of main foyer, alterations to existing learners' pool
2. Future tenancy/retail areas
3. Replacement of hydroslide
4. Fitout of mezzanine floor and cafeteria
5. Potential future developments (ice rink, cricket, running track)

9. PROGRAMME

The grandstand re-roofing achieved Practical Completion on 9 August 1999.

Design development and documentation on the remainder of the project is ahead of the Master Programme, with 90% design completion being achieved on 13 August 1999.

The current programme for the project is as follows:

Design development complete	27 September 1999
Tender documentation issued	26 October 1999
Tenders close	24 November 1999
Tender Evaluation/Recommendation report to special Projects & Property Committee	10 December 1999
Council approval	16 December 1999
Main building construction commences on site	Late January/early February 2000
New 51 metre competition pool complete	April 2001
New leisure pool, Teach Pool and remainder of building contract complete	June 2002

Since the design development and documentation is now at a very advanced stage, any change to the scope of the project (e.g deleting the mezzanine floor, leisure pool or new 51 metre competition pool) will result in additional redocumentation costs from the consultants and a delay in the project programme.

10. PROJECT DELIVERY

The project will be fully designed and documented, and will have a Schedule of Quantities prepared prior to tendering a fixed lump sum contract.

Registrations of Interest have been called for the selection of the main contractors and key subtrades (mechanical services, electrical services, fire services and water treatment) to tender on the project.

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11. ALTERNATIVE OPTIONS

A number of alternative options have been reviewed and are attached as Appendix 1.

These included widening and lengthening the existing pool to provide a 10 lane pool, constructing a new leisure pool beside the existing building and only carrying out the \$11.1m maintenance upgrading.

As noted above, it is considered essential that the \$11.1m maintenance upgrading is carried out immediately. It is also not considered economic to increase the depth of the existing pool to a uniform depth of 2 metres.

The current proposal to construct a new 51 metre competition pool beside the existing building and then construct a new leisure pool with mezzanine floor above is considered to be the best option. By staging the construction, the proposal provides for a competition pool to be available at all times.

PART B – THERMAL ENERGY SOURCE

The thermal energy source for the QEII Pools Redevelopment recommended by Beca Carter Hollings and Ferner, the Mechanical Services Engineer for the project, is a combined heat pump/boiler installation. This comprises an electrically driven pump which uses waste heat from the building as its heat source. The heat pump operates at a very high load factor, providing almost two thirds of the annual thermal energy requirements of the facility. The boiler plant tops up the thermal energy demand during periods of lower outdoor temperatures.

The thermal plant is essentially centralised which provides the best opportunities for changing energy sources in the future e.g diesel boilers could be readily converted to an LPG energy source simply by replacement of the burners and with provision of appropriate storage facilities for LPG at a total estimated cost of \$100,000.

A number of possible energy sources have been considered including diesel oil, coal, LPG, solar, biomass (waste wood chips), biogas, wind and waste paper.

The 22 July 1999 Council meeting requested that the opportunities for industrial boiler feedstocks derived from the waste stream be investigated.

Discussions have been held with the Recovered Materials Foundation and they advise that waste paper is potentially a fuel source for the production of thermal energy. However, it is not yet proven within New Zealand on a commercial basis. The technology is some time away from being implemented. The capital cost of boiler plant suitable for waste paper as a fuel source would be higher than that for diesel or LPG and operationally waste paper would have a higher maintenance cost because of ash removal and fuel handling.

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The choice of energy source appears to be between diesel oil and LPG.

However, in order to obtain the most competitive thermal energy source, it is recommended that Corporate Services Purchasing prepare tender documents and call tenders for the supply of a thermal energy source for both the QEII Pools Redevelopment and Christchurch Art Gallery projects.

The tender documentation would be prepared with the assistance of the Mechanical Services Engineers for both projects and would cover such issues as long-term sustainability of price/supply and installation of storage vessels and delivery. The tenders would be reported to the Council for a decision on the thermal energy source for the projects.

Currently the tender documentation on the projects are based on diesel installations. If a tender price for LPG, or indeed any other fuel alternative, is adopted by the Council, the consultants would be requested to amend the documentation.

A report on energy issues and the energy efficiency features included in the project will be tabled at the meeting.

SUMMARY

PART A - SCOPE OF PROJECT

The Council at its meeting on 24 June 1999 approved the preparation of contract documentation (working drawings, Specifications and Schedule of Quantities) and the calling of tenders for the project.

The current scope of the project includes the \$11.1m maintenance upgrading of the existing building together with the construction of a new 51 metre, 10 lane competition pool beside the existing building, a new Teach Pool and leisure pool in the existing building and an undeveloped mezzanine floor above the new leisure pool.

The total budget provision in the 1999/2000 Council Plan is \$20,557,850, and **the project is on budget.**

Payments up to 31 August 1999 on the project amount to \$1,870,657.80.

The design development and documentation is ahead of the Master Programme and achieved 90% design completion on 13 August 1999. Design development is scheduled to be complete on 27 September 1999, with tender documentation ready for issue on 26 October 1999.

The Leisure Unit considers that there are definite needs for a new 51 metre, 10 lane competition pool, leisure pool and mezzanine floor.

The current design is considered to be the best option to meet these needs.

Any change to the scope of the project will result in additional redocumentation costs and a delay in the project programme.

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PART B – THERMAL ENERGY SOURCE

The thermal energy source for the project is a combined heat pump/boiler installation. The thermal plant is essentially centralised which provides the best opportunities for changing energy sources in the future.

The choice of thermal energy source appears to be between diesel oil and LPG. However, in order to obtain the most competitive thermal energy source, it is recommended that tenders be called for the procurement of a thermal energy source for both the QEII Pools Redevelopment and Christchurch Art Gallery projects.

The boiler installation to be included in the tender documentation for the QEII and Art Gallery projects would be based on the results of the tender for the supply of the energy source.

Waste paper is a possible future fuel source but it is not proven in New Zealand on a commercial basis and the technology to provide a useable fuel has yet to be proven and implemented.

- Recommendation:**
1. That the Council reconfirm that the scope of the project include:
 - (a) Maintenance upgrading to the existing building (estimated at \$11.1m).
 - (b) Construction of a new 51 metre, 10 lane competition pool constructed in a new enclosure beside the existing building.
 - (c) Construction of a new teach pool and leisure pool, including wave machine, in the area occupied by the present 50 metre pool.
 - (d) Construction of a new mezzanine floor above the new leisure pool.
 2.
 - (a) That Corporate Services Purchasing be requested to prepare tender documentation and call tenders for the supply of the thermal energy source for the QEII Pools Redevelopment and Christchurch Art Gallery projects.
 - (b) That the type of boiler installation for both projects be based on the results of the tender for the supply of the thermal energy source.

CONSIDERED THIS 10TH DAY OF SEPTEMBER 1999

MAYOR