10. 9. 99

SUPPLEMENTARY REPORT OF THE MAJOR PROJECTS CO-ORDINATOR

2. QUEEN ELIZABETH II POOLS REDEVELOPMENT THERMAL ENERGY AND ENERGY EFFICIENCY ISSUES RR 10678

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Corporate Plan Output: Corporate Plan, Volume III, Capital Output 8.4.66, 8.4.70	

The purpose of this report is to advise Councillors of the thermal energy and energy efficiency issues on the QEII Pools Redevelopment Project.

INTRODUCTION

This is a supplementary report to the report on the "Queen Elizabeth II Pools Redevelopment – Scope of Project/Thermal Energy Source," and refers specifically to Part B of that report.

THERMAL ENERGY/ENERGY EFFICIENCY ISSUES

Craig Price of Beca Carter Hollings and Ferner, the Mechanical Services Engineer for the project, reports:

"The redeveloped QEII pools are proposed to have thermal energy produced primarily by an electric heat pump, utilising waste heat as its heat source. The heat pump provides approximately two-thirds of the annual thermal energy requirements of the facility. The thermal energy demands are topped up by two hot water boilers, the fuel source for the boilers will probably be either diesel or LPG. (A final decision on the choice of boiler is subject to the tendering of the fuel supply contract. Both fuel options are considered to be environmentally acceptable).

While coal, the present fuel source, provides lower life cycle costs, for this particular project it has not been recommended on environmental grounds.

In adopting the above solution Christchurch City Council are taking a very environmentally sensitive and forward thinking approach (two-thirds of the potential environmental discharges have been eliminated by the use of the heat pump). In taking this approach, the Christchurch City Council are also acknowledging their fiscal responsibilities (this solution provides a balance between capital and operating costs to achieve a reasonable life cycle costing).

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Further energy enhancement features have been investigated, such as alternative renewable energy sources, including solar energy. To provide some supplementary solar heating will cost $250,000 to $300,000 additional capital funding, with a payback period exceeding 15 years. A similar level of energy savings (and consequently an equivalent reduction in environmental discharges), can be achieved by utilising more sophisticated boiler technology – known as a condensing boiler, for around one tenth of the capital investment ($30,000). This further enhancement is proposed for the primary boiler, thus further contributing to the energy efficiency of the facility and reinforcing the Council's acknowledgement of their environmental responsibilities."

The energy efficiency features for this project have been developed and analysed in close co-ordination and consultation with Dr Leonid Itskovich, the Council's Energy Manager, who supports the findings of the Beca Carter Hollings and Ferner report.

Recommendation: That a condensing boiler be used for the primary boiler at the QEII Pools Redevelopment project.

CONSIDERED THIS 10TH DAY OF SEPTEMBER 1999

MAYOR