



City of Richmond

Report to Committee

To: General Purposes Committee

Date: January 22, 2004

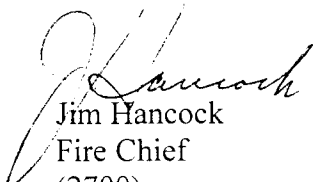
From: Jim Hancock
Fire Chief

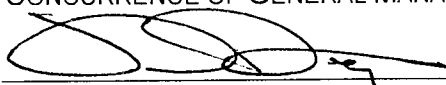
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Re: **Community Safety Building Replacement - Sea Island Fire Hall**

Staff Recommendations:

1. That the replacement of the Sea Island Fire Hall proceeds as Option 3 at a revised project cost of \$2,875,000.


Jim Hancock
Fire Chief
(2700)

FOR ORIGINATING DIVISION USE ONLY		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Budgets	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	 Jeff Day, P.Eng. Eng. & Public Works

Staff Report

Origin

Richmond Fire Rescue (RFR) and Facility Management staff have been working with architects and quantity surveyors to revise and refine the scope of work for the Sea Island Fire Hall project since the estimated construction cost for the project exceeds Council approved budget.

This report addresses the necessary changes to the project in order to remain closer to, or within the existing budget allocation, and seeks Committee's approval for the revised strategy.

Background

Staff research undertaken during the Community Safety Building Replacement Master Plan study identified the need to replace four fire halls, including the Sea Island Fire Hall, and resulted in Council adopting a design standard of 7,650 sq. ft. for the new community fire halls. A preliminary estimate, solely based on square footage and 2002 costs, was utilized for budgeting purposes.

Provincial guidelines require that all new fire halls be built to post disaster standards as per the Building Code. Furthermore, the selected site for the Sea Island Fire Hall must meet the Federal Department of Fisheries and Oceans' requirements to protect environmental sensitive fish habitat areas.

The final schematic design for an environmentally sustainable Fire Hall for Sea Island represents a facility of approximately 7,500 sq. ft. (Attachment 1) but with an estimated project cost of \$3.13M, an increase of \$0.5M from the approved budget of \$2.63M.

Analysis

The following are adjustments to the scope of the project due to unexpected and non-controllable features, e.g.:

- On and off-site preparation associated with post-disaster, soil conditions and sustainability elements (\$100,000);
- Department of Fisheries and Oceans' requirements for fish habitat compensation and landscaping costs to incorporate paths and a bridge into environmentally sensitive areas (\$56,000);
- Traffic signalling pre-emption controls (\$90,000);
- A recommended increase in design and construction contingency of 10% due to an anticipated "hot market" and higher regional construction costs (\$118,000);
- Variable percentage increases in city costs i.e. Fees, F&E, Permits, DCC's, GST and overheads etc. (\$136,000).

Discussion

In order to construct the Sea Island Fire Hall within the existing budget of \$2.63M it is necessary to reduce the total building construction costs by up to \$0.5M to compensate for the above factors. This can be done in one of two ways:

- Maintain the required RFR program space of 7,500 sq. ft. and reduce the overall quality, appearance and lifecycle of the building, or
- Maintain the quality, appearance and lifecycle of the building and reduce the program space (area).

A third option for consideration would be a compromise in reducing both space and quality without necessarily sacrificing the overall project values.

Option 1

Within budget - 7,500 sq.ft. Program Space – Low Quality – Minimal Sustainable Initiatives

To accommodate this option it would be necessary to abandon the current design principles and consider a simpler, steel framed or possibly a pre-engineered facility (Attachment 2).

Steel framed pre-engineered buildings are frequently used by the construction and warehouse industry for lightweight medium life buildings (up to 50 years) and have been adapted in many situations to fulfil the needs for a post disaster fire hall. Examples of this type of application can be found in Squamish and Oliver in B.C, and throughout the U.S.

This style of building would be “Power Smart” and would include permeable pavement to better manage storm water. It will also provide a post disaster facility within the current budget and meet the operational requirements of RFR.

Appendix I provides a summary table of advantages and disadvantages of this and other options.

Option 2

Within Budget – 6,500 Sq.Ft. Program Space - High Quality – Sustainable Initiatives

In this option it would be necessary to eliminate the RFR training room, multi-purpose room, and community meeting space, and potentially reduce the height of the training tower from 60 ft. to 30 ft. These items could then be planned for future addition as RFR operations dictate. (Attachment 3.)

The resultant fire hall would retain its primary program characteristics with the second floor becoming multi purpose to compensate for the loss of the Training and Education Development Centre (EDC) and a corresponding loss of community access space. Design concepts using brick construction and environmental sustainability would be maintained in keeping with the City’s vision and commitment to environmental sustainability.

Since the Sea Island site is preloaded for a larger facility, Option 2 also provides the ability to revisit and expand into a 7,500 sq.ft. facility at some point in the future.

Staff anticipates that these measures would be sufficient to achieve the required cost reductions, but the resulting facility would not satisfy RFR operational requirements for a successful fire hall.

Option 3

Increase Budget - 7,000 Sq.Ft Program Space - Reduced Quality - Minimal Sustainable Initiatives (Recommended)

A number of reductions can be considered that would retain the larger benefits of meeting RFR operational needs, without sacrificing the existing design intent. These reductions in scope (Attachment 4) would reduce building size by approximately 500 sq. ft., which results in RFR sharing meeting space with the community. Building quality would be acceptably reduced using heavy steel frame construction, split concrete block and cladding rather than structural concrete and bricks. Sustainable "green" initiatives would also be impacted as noted in Option 1.

Implementing these reductions in the scope of work would necessitate an estimated increase of \$244,000 in the budget. The resultant building would meet the basic operational requirements of RFR and reflect the City's vision and values for quality.

As evident from the impact summary as noted in Appendix I, Option 3 provides a compromise solution that maintains the integrity of the current design without sacrificing overall construction quality other than limiting "Green" initiatives. Option 3 facility would be approximately 7,000 sq. ft. and it will satisfy the basic operational requirements of RFR as well as provide continued access to meeting space for the community.

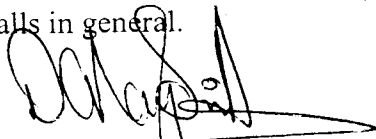
Financial Impact

Proceeding with Option 3 requires an increase of \$244,000 to the original budget. This funding is available from the Community Safety Building Replacement budget with no increase in the overall global strategy at this time. Any surplus or savings realized during the project will be returned to the Community Safety buildings budget.

Conclusion

Option 3 provides a building that will meet the basic operational needs of RFR and the community through the sharing of meeting space. It is recommended as a compromise solution because of the fiscal realities currently facing the City.

The Sea Island Fire Hall is the first of four fire halls slated for replacement over the next several years. Dependent upon which option is selected, the decision will provide a "frame of reference" for the future RFR fire hall replacements and provide input into future design and budgets of fire halls in general.



David Naysmith, P. Eng.
Manager, Facility Planning & Construction
(3312)



Reg Smith
Deputy Chief
(2702)

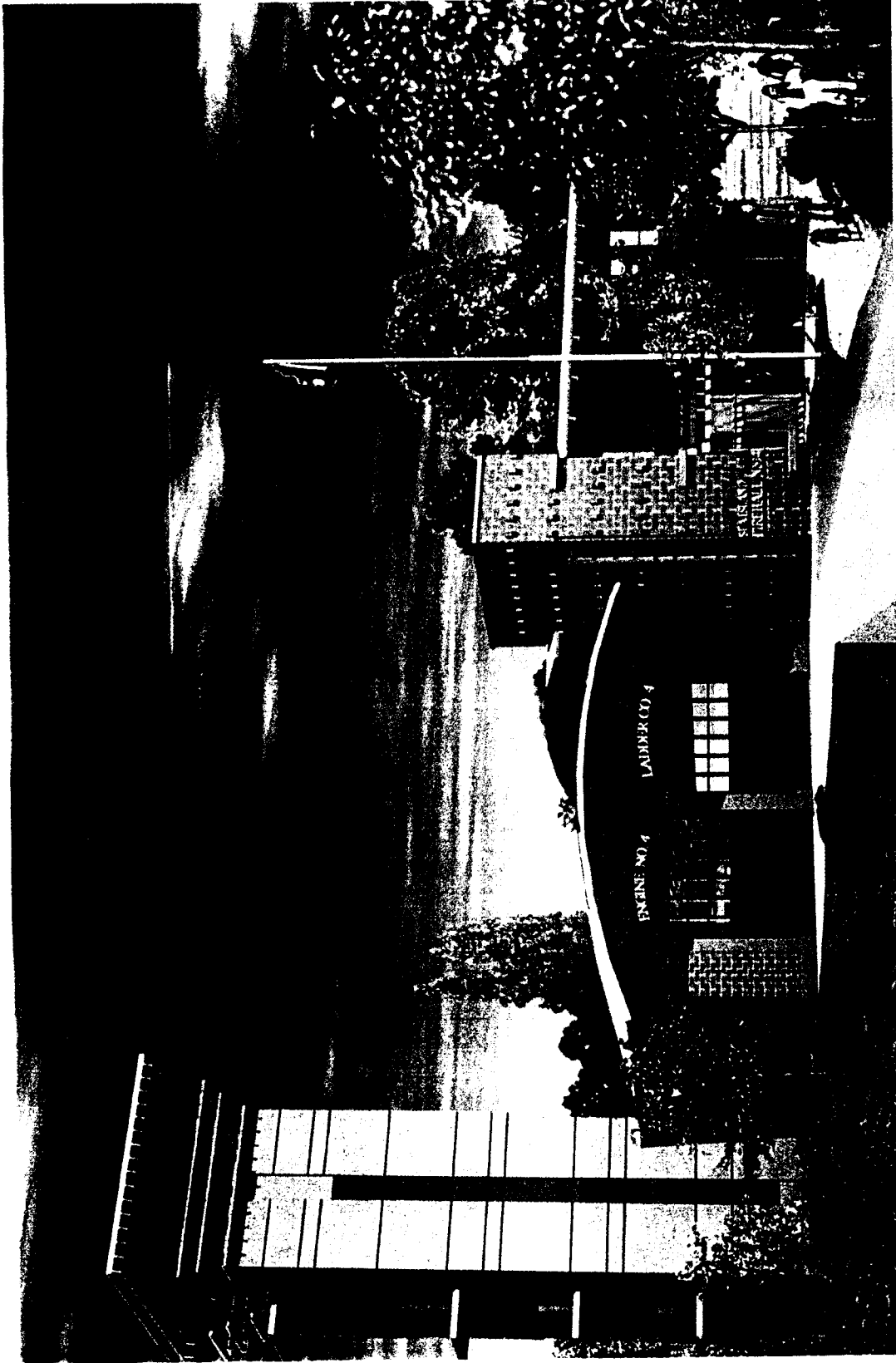
APPENDIX I: SUMMARY OF OPTIONS AND IMPACT SUMMARY

Description	Option 1	Option 2	Option 3
	Pre-engineered	Custom-built	Custom-built
	7,500 sq ft	6,500 sq ft	7,000 sq ft
Total budgeted project costs (<i>based on Nov 2003 Canadian Construction unit costs</i>)	\$2,326,000	\$2,631,000	\$2, 875,000

Impact Summary:

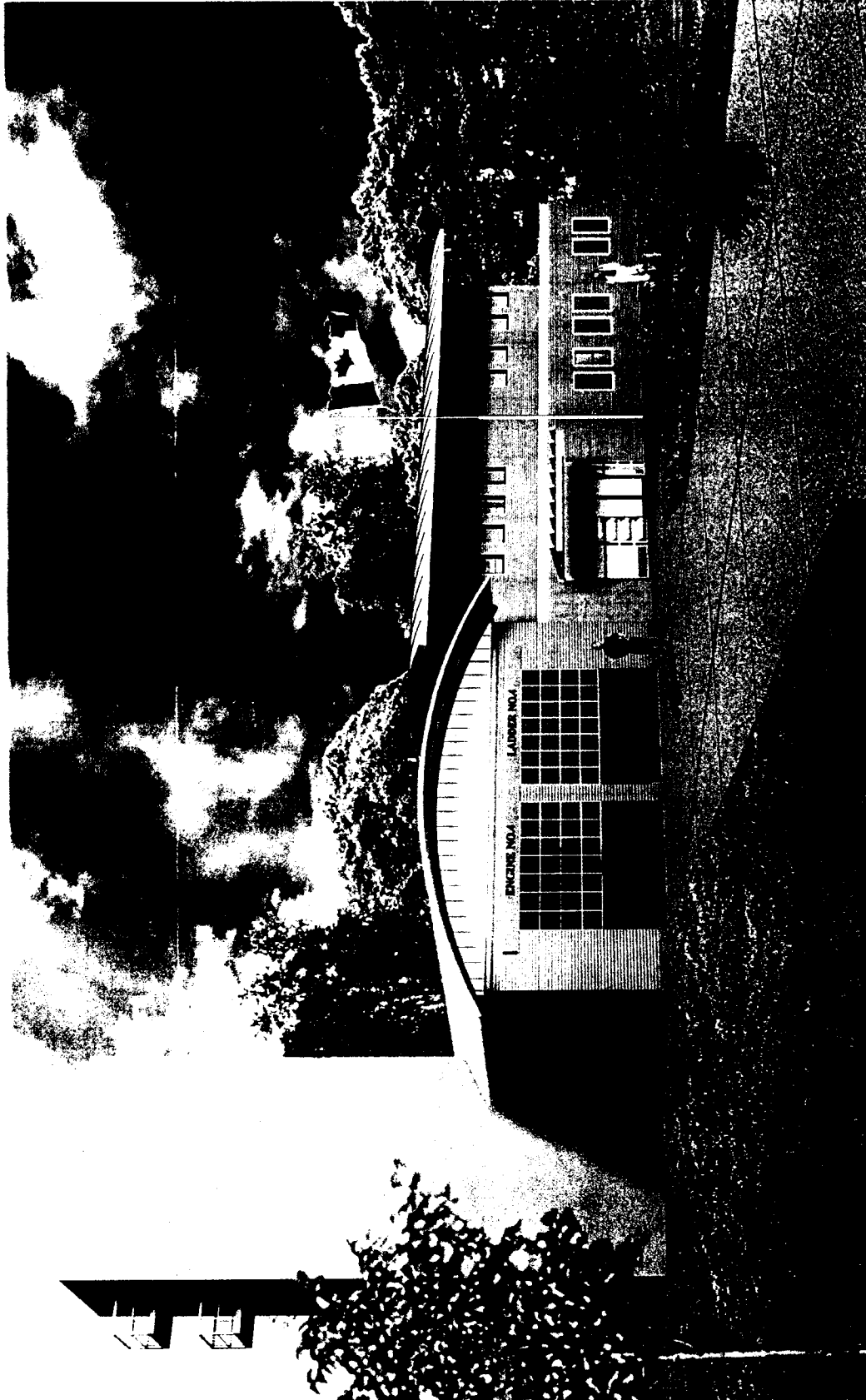
Option 1	Option 2	Option 3
Pre-engineered	Custom-design	Custom-design
7,500 sq ft	6,500 sq ft	7,000 sq ft
Within budget	Within budget	Additional funding of \$244,000 required
Meets long term needs of RFR	Does NOT meet the long term needs of RFR	Meets basic needs of RFR
Meets community access needs and requirements	Does NOT meet community access needs and requirements	Meets community access needs and requirements
Does NOT meet expectations of City vision: less “curb-appeal”	Meets full expectations of City vision	Meets basic expectations of City vision
Does NOT provide an environmentally sustainable building: Includes Power Smart and permeable pavement	Provides an environmentally sustainable building: “green initiatives”	Does NOT provide an environmentally sustainable building: Includes Power Smart and permeable pavement
Does NOT meet neighbourhood expectations for design	Meets neighbourhood expectations for design	Meets neighbourhood expectations for design
Maintenance and Lifecycle costs NOT optimized *	Maintenance and Lifecycle costs optimized	Maintenance and Lifecycle costs optimized
Lifecycle: up to 50 years	Maximizes building lifecycle: up to 75 years	Maximizes building lifecycle: up to 75 years

* **Option 1**, meeting the approved budget, operational requirements of RFR, and dedicated community meeting space is achieved to the detriment of building quality and environmental sustainability. Staff estimates this will have a maintenance and lifecycle impact of \$220,000 from a reduced lifecycle over the 50 years, over Options 2 and 3.



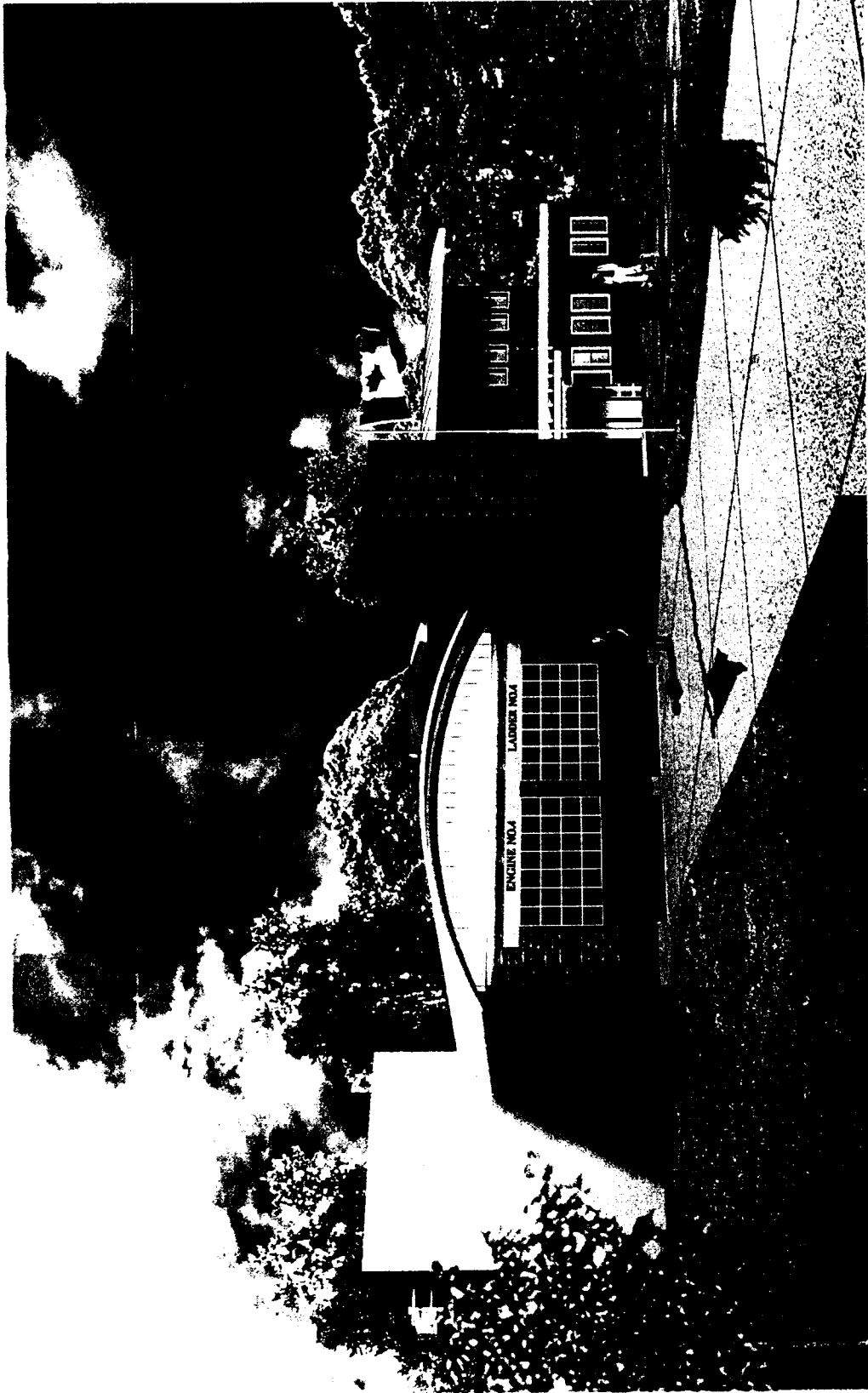
City of Richmond
Firehall No. 4 - Sea Island
November 6th, 2003

ATTACHMENT #1



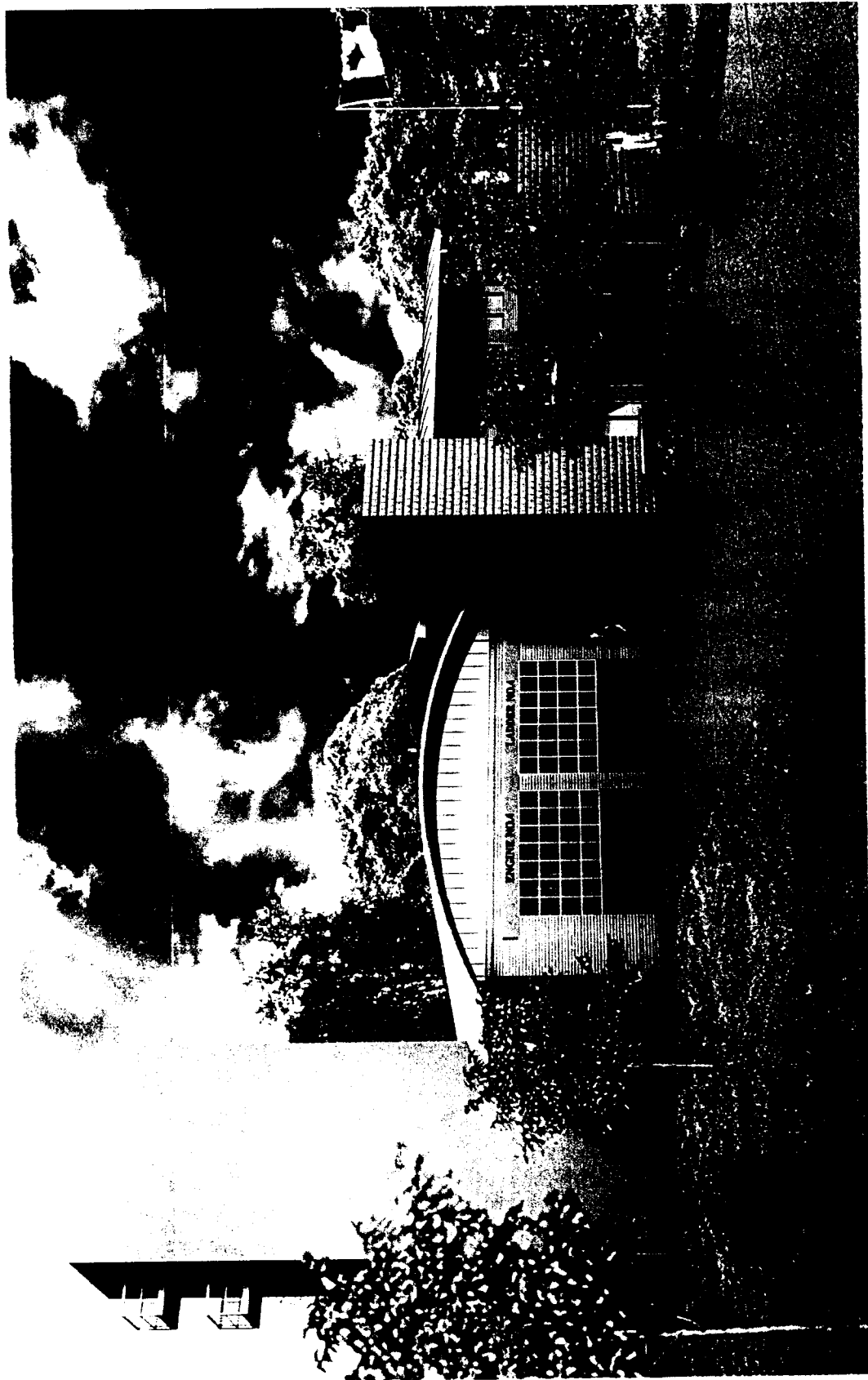
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ATTACHMENT #2



City of Richmond
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ATTACHMENT #3



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ATTACHMENT #4