

CITY OF NUNAWADING THEATRE ARTS CENTRE

PROGRESS REPORT 10-MAY-84

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Development Report No.2.

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1. Impact of Regulations :

- (a) "Uniform Building Regulations" have been replaced by "Victoria Building Regulation". This has very little effect on the building, but may reduce some requirements slightly.
- (b) Department of Labour and Industry will have some requirements in stage equipment, etc. but these are not expected to pose problems.
- (c) Health Commission of Victoria administer "Public Building Regulations Vic. 1952." While it is expected that this dated regulation will be incorporated into V.B.R. by 1985 it is still in effect, and requires the following special provisions :-
 - (i) fire separations to isolate stage, workshop, dressing room area, and props area, from each other and from remainder of building, all to 3 hour rating, and requiring separate switch-board in each area.
 - (ii) alternative fire isolated exits from above areas (not via other parts of building).
 - (iii) fire sprinklers fitted to above areas (this also requires 3 hour separation from non-sprinklered areas to satisfy S.A.A. sprinkler code).

- (iv) main switchboard easily accessible from exterior and in fire isolated compartment.
 - (v) auditorium-cut-off curtain to be of "manufactured" fire-proof material (not treated material), and not to obstruct aisles.
 - (vi) exits from fly gallery at opposite ends.
 - (vii) dressing rooms not to have "dead ends"
 - (viii) first aid cabinet needed
 - (ix) Fire Alarm to be fitted in theatre
 - (x) "Smoke Locks" between projection room and auditorium
 - (xi) examination fee for plan approval - \$ 250.00
- (d) Town Planning - no permit appears to be necessary, as the use qualifies as "Municipal Purposes".
- (e) Fire Brigade - M.F.B. recommendations will probably require sprinklers (c.(iii) above), hydrants, hose reels and extinguishers at switchboards, etc. Cost of obtaining report from M.F.B. will be approximately \$ 1,650.00

2. Acoustic Considerations :

(based upon discussions with Graeme Harding)

- (a) tilt slab construction appears to be well suited to sound isolation.
- (b) Acoustic Stramit is recommended for roof systems, including stage tower, to minimise rain noise and airborne sound intrusion. Primary insulation under metal roofing will also damp the above sound sources.
- (c) acoustic operable wall is limited in performance to approximately 42 DB, so that adjoining bookings should not include loud musical events.
- (d) theatre acoustics - no problems envisaged in theatre this size. Simple exposed adjustable speaker columns recommended.
- (e) sound shell - attention to speaker type and location should minimise public irritation, but "rock music" type events not recommended.

3. Review of User needs :

The following adjustments have been made to incorporate features requested by user groups, and to eliminate problems identified by them -

- (a) catering kitchen added to function room (for use by community groups). This can be used with whole function room, or either part.
- (b) chair storage annex added to function room. This would make an excellent band location with full function room use.

- (c) theatre office enlarged to provide separate ticket office.
- (d) tea kitchen revised to give better sound isolation (this can also be used in conjunction with catering kitchen).
- (e) passage from foyer to stage deleted (see below for stage access).
- (f) rear access and rear aisle added to theatre (this also answers H.C.V. criticism).
- (g) automatic entrance doors added
- (h) stage loading direct from dock.

4. Structural review :

Some refinement of roof framing has been developed -

- (a) framing of function room, foyer and rehearsal adjusted for economical use of "Stramit" system
- (b) theatre roof framed with 3 dimensional tetrahedral system with Stramit roof system exposed. This gives maximum volume and allows easy access for stage front lighting.
- (c) slight lowering of roof profile requires adjustment of sound shell roof frame to main opening beam and conventional trusses.

5. Mechanical services :

While evaporative cooling was suggested in some areas for reasons of economy, this method relies on high air volume, and large relief vents, giving system noise and acoustic leakage.

Also, H.C.V. is understood to have banned evaporative coolers, to eliminate "Legionairres disease".

The following is proposed :-

- (a) theatre - full air conditioning (plant room at rear), with oval spiral duct each side (painted in dark colour, together with upper walls and ceiling). Return air at rear, with air escape from roof vent at stage tower.
- (b) function room - full air conditioning with plant roof mounted above tea kitchen. Ducts run either side of truss above operable wall and return air taken out at far corners.
- (c) rehearsal room - as (b) with oval ducts run across foyer.
- (d) foyer - air conditioned to reduced standard as a buffer between function areas and the exterior. Exhaust fans incorporated to cope with smoke.
- (e) toilets - exhaust ventilation.
- (f) kitchens - as (e).

- (g) props, workshop and sound shell - mechanical vent and heating with fast recovery and individual controls for intermittent use.
 - (h) dressing rooms - heating and vent
 - (i) control room - exhaust vent giving positive outflow.
- Systems generally will be supplied with hot water and chilled water from plant under control room.
- (j) hot water - solar H.W.S. will service toilets and tea kitchen, while gas quick recovery units are suggested for catering kitchen and dressing rooms for intermittent use.

6. Electric services:

- (a) power supply - investigation reveals that civic centre main board has adequate capacity for the approximately 100 amps per phase required for this project. Underground mains will be used.
- (b) emergency generator - would need to be 75 KVA at cost of \$ 60,000.00 or more. This does not appear to be justified.
- (c) normal lighting will be fitted according to particular functions in the building, including aisle lights.
- (d) emergency lighting - will be fitted, including exit signs.
- (e) theatre lighting will be allowed for (see separate allowance)
- (f) smoke and heat detectors will be provided in non-sprinklered areas.
- (g) external security lighting will be provided
- (h) power - wiring to all scheduled equipment will be provided.
- (i) switchboards - main board is located in fireproof enclosure on exterior as per H.C.V. requirement. Switchboards to stage, workshop, dressing and props have been separated as required. Separate catering kitchen board will be included.
- (j) sound systems - theatre would have 3 microphone positions, and sound system to two speaker columns beside stage.
 - Sound shell system not yet defined.
 - Function room would have two separate systems, capable of combination with speakers directed out from centre. Each of the above would have loop system broadcast for those with hearing aids.

7. Service requirements :1. Fire Service :

Connection allowed from civic centre for exterior fire hydrants, fire hose reels, sprinkler protection to stage, workshop, dressing and props areas, and loading dock, incl. water drenching to fire curtain.

2. Gas :

Main service line required for heating boiler, with branch for catering kitchen and supply to H.W.S. at dressing area.

3. Electric :

see above

4. Storm drains :

Storm drains run around building, including trench drain in front of sound shell, all connected to main storm drain in easement.

5. Sewer :

Sewer drain runs along east boundary - connection via new car park area allowed for.

6. Telephone :

It is assumed that extension would be made to existing P.A.B.X. system to provide telephone and intercom facilities (no allowance made for this).

7. Other :

No provision made for in-house T.V., etc.

8. Car Parking and Access :

(a) truck access is made via east car park to keep clear of Carter Avenue. This suggests extension of car parking capacity (or omission of southern portion).

(b) car parking - 82 extra spaces can be constructed, bringing on-site parking at civic centre to approximately 320 (excluding Whitehorse Road parking). If the need develops further on-site parking could be built east of the access road.

(c) pedestrian - path to coffee shop is extended to theatre, with pick up points from parking bays.

Future development could include an all-weather path from theatre to centre courtyard with connection to lower courtyard.

9. Description of Facilities :

- (a) Theatre - fully air conditioned, 415 seat, stepped floor theatre, with fixed seating, stage 16.9 x 9 m. with fly tower, orchestra pit and alternative thrust stage.
 Front wall - timber faced, other walls texture painted concrete
 Ceiling - acoustic Stramit, with exposed space frame and ducts, all painted uniform colour to minimise reflection of stage lighting
 Floor - carpeted
 Seats - wool upholstered fronts and armrests
 Projection room at rear, including lighting control
 Access to foyer from front and back, as well as to stage and to exterior
- (b) Foyer - 18 x 7.6 m. finished generally as (a), giving access to toilets, theatre office/booking office, 2 function rooms rehearsal room. Highlight windows and floor length glass entrance fitted with automatic doors and manual doors. Partly air-conditioned with exhaust ventilation (buffer between fully air conditioned spaces and exterior).
- (c) Toilets - Female public toilet with ante room (vanity basins) and 10 toilets (well in excess of H.C.V. requirement)
 - Male public toilet with 9 urinals, 2 toilets and cleaners room
 - Disabled persons - 2 bi-sexual toilets.
- Finishes . floors and walls - tiled, including floor drains
 . partitions - laminate finished
 . ceilings - grid system impervious acoustic panels
 . exhaust ventilation
- (d) Rehearsal room - fully air conditioned, 14.5 x 8.65 m., adjoining foyer, generally as (a), with east windows and outside loading door. Ceiling height average 3.625.
 Two sets double doors to foyer to suit exhibitions; mini-kitchen included. Storage for chairs, etc. (11 m²).
- (e) Function rooms - two rooms (175 m² and 150 m²), fully air conditioned, to seat 280 total for dining, with effective 38 DB operable wall between. Each has entrance passage with two sets of doors for sound isolation. Highlights are provided, a chair storage recess included and 900 deep storage lockers for user group use.
 Finishes . ceiling and walls as (a)
 . floors - parquetry
 . operable wall - laminate finish
- (f) Theatre office - air conditioned office 3 x 3 m. with separate ticket office 3 x 2 m. open to foyer
- (g) Tea kitchens - 4.8 x 5 m. serve foyer and each function room with doors and hatches fitted with sound seals, exhaust ventilation, heavy duty domestic fittings, tiled floors and walls.

Equipped with boiling water unit, domestic stove, refrigerator, and trolley to service kiosk in foyer.

- (h) Catering kitchen - approximately 55 m² main kitchen equipped with heavy duty stove, grill, slicer, refrigerator, toaster, dishwasher, S.S. benching, garbage disposer, S.S. hoods, staff toilet and change room, store room, and external garbage cupboard. (This facility designed to suit community group use, rather than commercial caterer).

Finishes . tiled floors and walls
 . impervious ceiling
 . laminate faced doors with S.S. kick plates

- (i) Dressing rooms - 54 m² common dressing room with provision for changing cubicles, 15 m. run of dressing tables, male and female toilets and showers (generally finished as above) and four place bi-sexual ablution trough. Access is provided to stage and sound shell (both sides each), props (2 sides) and function room.

Finishes . vinyl floor
 . painted walls and ceiling

Heating and mechanical vent provided with exhausts from toilets and showers.

- (j) Sound shell - stage has 15 m. x 4150 opening, stage 10.4 m deep, and back width 9 m. Shell office, sound and light platform and approximately 45 m² back stage space are provided. Sloped ceiling (fixed) is fitted, including lighting slot at front. Sides of shell close as doors, to give 160 m² enclosed rehearsal space, heated and ventilated and with natural light at ends.

Finishes . painted hung ceiling - balance of roof foil insulation over mesh support
 . coloured concrete floor
 . painted back wall and doors
 . false ceiling in office
 . external doors include fire escape door and control window (1 way glass)

Sound shell has access to workshop, dressing room, props, and steps to ground level each side.

- (k) Workshop - comprises 149 m² "factory" with 4 m. high loading doors to truck dock roof height (av. 5.5 m.), skylighting, sink, and heating (natural vent). Truck dock has 5 m. clear height, and doors to stage and workshop 4 m. high.

- (l) Plant - some items of mechanical plant are located above public toilets (screened from view), balance are housed below projection room and part of sub-theatre space (sound isolated)

- (m) Props - 94 m² props floor above dressing room includes roof lighting, mechanical vent and heating, laundry trough and machines.

Access is provided from props floor to stage tower, control platform, and 2 fire isolated exit stairs.

- (n) Storage - an area of approximately 140 m² is provided under the theatre (average height 1.8 m.) for dry storage.
- (o) Disabled access - is provided to foyer, toilets, function rooms, reserved spaces at front of theatre, and to rehearsal room.

10. Equipment and Furnishing :

The following items are allowed for :-

- (a) stage - (i) fire curtain (required by H.C.V.)
- (ii) main curtain with motorised bi-parting and counter-weighted lifting
- (iii) projection screen with motorised masking and counter-weighted lifting
- (iv) lighting control platforms
- (v) grid floor to tower
- (vi) 20 lines counterweighted for scenery
- 3 lighting bars counterweighted
- 10 manual lines for borders, etc.
- 4 front of house lighting bars and cat walks
- (vii) basic legs, borders, back drop, cyclorama
- (viii) patch panels, dimmers, and control panel
- (b) theatre - (i) cut-off curtain now limited to 2 m. high, to maintain aisle access and projection clearance. This would be socketted into floor with aluminium posts, and when not in use would be located at back wall to improve acoustic absorption. Several alternative positions could be used to give capacities of 270, 328, and 415 seats.
- (ii) projectors - it is assumed that the Blackburn-Mitcham Film Society will re-locate and bring projectors with them.
- (iii) sound - see Electrical.
- (c) workshop - no provision made for machine tools, etc. but some storage is included.
- (d) sound shell - (i) sound - see Electrical
- (ii) main doors - would be steel framed with double face, and thermal insulation, hinged on thrust bearing and with spring loaded wheel at outer end. Mechanical operation to control swing will be required.
- (iii) office - desk and chairs included
- (e) function room - (i) seating - stacking chairs and folding tables provided
- (ii) storage - cupboards for user groups included
- (iii) sound - see Electrical
- (f) catering kitchen - equipment included - refrigeration, sinks, main stove, griller, slicer, toaster, hot table, garbage disposer, urns, dishwasher, and utensils.
- (g) tea kitchen - equipment includes - refrigeration, urns or boiling water unit, sinks, etc.

(h) office - desk and chairs included

(i) rehearsal room - tea preparation area provided, and stacking chairs included.

11. Revised Estimates :

See attached list.

12. Timing :

In order to complete the building by 1st November, 1985, the following time-table is suggested -

- | | |
|--|---------------------------------------|
| (a) authority to prepare drawings and specifications - | 1st July 1984. |
| (b) research and documentation | July to 28th Sept. |
| (c) Bill of Quantities and permits | 1st to 22nd Oct. |
| (d) tender period | 26th Oct. to 20th Nov. |
| (e) decision to accept or modify tender by | by 14th Dec. 1985. |
| (f) construction period - | 21st January, 1985, to early October. |
| | (leaving buffer for weather, etc.) |

13. Cost Adjustment :

Part A. Building

Cost adjustments depend upon -

- (i) inflation rate directly affecting labour rates and cost of materials
- (ii) supply and demand situation in the building industry

As the project will be attractive to builders in size and nature, inflation is the major consideration, even if building activity increases.

Current inflation rate of approximately 6% p.a. is probably unrealistic, in view of 4.1% wage rise, claims for shorter hours, claims for superannuation, etc. A figure of 10% p.a. is therefore suggested, as a basis for calculation.

(a) pre-start cost rise - 8 months on building components (excluding consultants fixed fees)	\$
(6.66% of 1,363,000)	91,000
(b) expected rise and fall contract adjustments, during construction	75,000
plus Estimate	<u>1,512,000</u>
Total Estimated Building Cost -	<u>\$ 1,678,000</u>

Part B. Site Works

Site works can be done in whole or in part at any time,
subject to co-ordination of drainage works - assume 10%
cost rise -

estimated cost of site works \$ 135,000

Parts C. D. E.

As scope and quality of furniture and equipment are
highly variable, and early purchase can be negotiated
at fixed prices, cost rises should be limited - allow
8% cost rise -

estimated cost of fixed furniture and equipment	145,000
estimated cost of loose furniture	45,000
estimated cost of theatre fittings and lighting	<u>135,000</u>

TOTAL ESTIMATE \$ 2,138,000

14. Funding :

Based upon above estimates and time-table the following funding
will be required....
(including inspection charges)

Development - 1984.

30th June. Arch. Struct. Mechan. Electr.	6,000
31st July. ditto plus Acoustic	26,000
31st August ditto	26,000
30th Sept. ditto	26,000
31st Oct. ditto plus Quantity Surveyor	18,000
30th Nov. Arch.	<u>2,000</u>

Construction, including contract administration

1985. 29th February	100,000
31st March	250,000
30th April	280,000
31st May	200,000
30th June	200,000
31st July	200,000
31st August	250,000
30th September	250,000
31st October	<u>304,000</u>

total \$ 2,138,000

ESTIMATE 10th May, 1984. (based upon Cordells Building Cost Book,
April, 1984.)Part A. Building Component :

(i) excavation to clear site, re-grade, fill, excavation for footings, etc.	15,000
(ii) concrete, including footings, floors, tilt slabs, concrete steps	278,000
(iii) structural steel roof and tower framing	75,000
(iv) roof systems, including gutters, fascias, D.P.s,	150,000
(v) brickwork (internal walls to toilets, entry posts)	17,000
(vi) carpentry and metalwork -	
P.C. fire curtain	\$ 8,000
P.C. acoustic operable wall	13,500
P.C. entrance doors & glass	12,000
P.C. sound shell doors	12,000
P.C. joinery cupboards	25,000
Including fire doors, stairs, thrust stage, access ladders, toilet cubicles, ceiling to sound shell,	165,000
(vii) fire services - hydrants, hose reels, fire alarm, including allowance for main connection	40,000
(viii) plumbing, including sewer and storm drains, fittings, three H.W.S, gas to main kitchen, (ref. also Mechanical).	45,000
(ix) wall finishes, including painting, tiling, painting of doors, steel, etc.	30,000
(x) floor finishes - including carpet tile theatre, foyer, and rehearsal room	
- tile toilets and kitchen	
- parquetry function room and stage	48,000
(xi) sundry fittings, mirrors, signs, etc.	9,000
(xii) contingency allowance	20,000
sub-total -	\$ 892,000
(xiii) electrical, including fire detection and splitting system to fire compartments	
(xiv) mechanical, including full air condition theatre	
" " function	
" " rehearsal	
part air condition foyer	
heat and vent to workshop	
" " to dressing	
" " to props	
exhaust to toilets	
" " kitchens	
" " control room	239,000
(xv) builders' margins on (i. to xii)	
co-ordination on (xiii and xiv)	150,000
carry forward -	\$ 1,363,000

Estimate - 10th May, 1984.

(xvi) consultant's fees -	brought forward	1,363,000
Architectural - 6% on building costs		
3% on mechanical/electrical		
plus advice on other components - fixed fee		70,000
Quantity surveyor - 1 3/4% on building cost - say		18,000
Structural - A.C.E.A. scale on structural		
components - fixed fee		25,000
Mechanical/Electrical A.C.E.A. scale		28,000
Acoustic - nominal fee		6,500
Approval application fees - M.F.B. and H.C.V.		<u>1,900</u>
Total Building estimate	\$	1,512,400

Part B. Site Development :

(work to be done by Council)		
(i) survey and soil tests		2,000
(ii) excavation to strip top soil, re-grade for roadways, amphitheatre, spread soil and re-grass		20,000
(iii) roadways, paths, including drainage		<u>100,000</u>
Total Part B.	\$	122,000

Part C. Fixed Furniture and Equipment :

(i) stage curtain, projection screen (part of building design) P.C.		6,000
(ii) theatre seating - 410 fixed, 5 moveable (part of building design)		50,000
(iii) 4 sound systems (ref. acoustic consultant) (intercom by Telecom) P.C.		45,000
(iv) equipment to main kitchen		30,000
(v) equipment to tea kitchens		<u>3,000</u>
Total Part C.	\$	134,000

Part D. Loose Furniture and Equipment :

(i) function room chairs and tables (280)		22,000
(ii) stacking chairs for rehearsal room (160)		7,000
(iii) office chairs and desks		1,000
(iv) function room china, cutlery, glassware & utensils-say		10,000
(v) foyer seating		<u>2,000</u>
Total Part D.	\$	42,000

Part E. Theatre Fitments and Lighting :

(to be purchased in co-ordination with user groups) allow \$ 125,000

* Footnote :

Items not in original estimate -

(i) added area for catering kitchen (70), chair storage (14), rear aisle to theatre (17), projection room area offset by height reduction and elimination of plant room above male toilets.	area of kitchen - chair store theatre -	50,000 5,000 12,000
(ii) catering kitchen equipment and mechanical vent		40,000
(iii) chairs and tables in function room		22,000
(iv) chairs in rehearsal room		7,000
(v) office and foyer furniture		3,000
(vi) sprinklers in stage, etc.		25,000
(vii) fire separations required by H.C.V. (approx.)		15,000
(viii) motorised front doors		8,000
(ix) extra seats in theatre (16)		1,920
(x) additional car parking spaces (23)		25,000
(xi) chattels in function room		10,000
(xii) fees payable to H.C.V. and M.F.B.		<u>1,900</u>

(approximately 226,000)