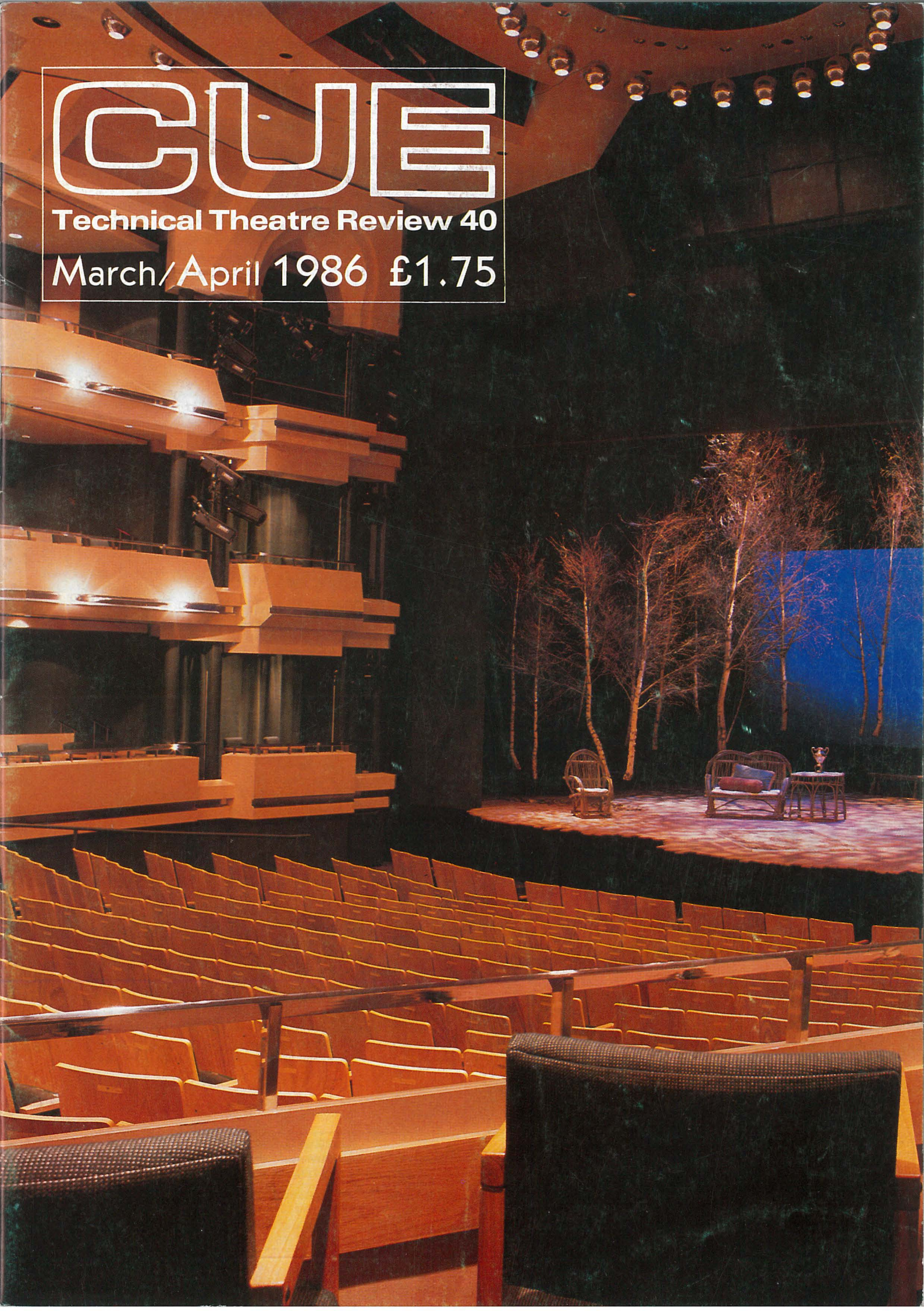


CUE

Technical Theatre Review 40

March/April 1986 £1.75



The world's finest black and white colour chart

COLOUR EFFECT FILTERS

Product	Effect Colour
101 Yellow	Sunlight and window effect – pleasant in acting areas
102 Light Amber	Lamplight effects – dawn sun effects – pleasant in acting areas
103 Straw	Pale sunlight through window effect – warm winter effect
104 Deep Amber	Mood effect on backings. Backlighting of floor and colour effect
105 Orange	Mainly light entertainment, functions. Fire effect if used with 106, 166, 104
106 Primary Red	Strong red effect
107 Light Rose	As for 104
109 Light Salmon	Interesting back lighting
110 Middle Rose	Pleasing effects for theatrical lighting
111 Dark Pink	Good for cycloramas
113 Magenta	Very strong – used carefully for small areas on set
115 Peacock Blue	Pleasing effect on sets, cyclorama cloths backlighting (ice rinks, galas, etc.)
116 Medium Blue Green	Pleasing effects for theatrical lighting
117 Steel Blue	Night effect used on sets – cycloramas
118 Light Blue	Strong night effect
119 Dark Blue	Mood effects – jazz clubs etc., back projection. Travelling matt blue
120 Deep Blue	Pleasing effects for theatrical lighting
121 Lee Green	Cycloramas
122 Fern Green	Cycloramas – good for mood effect
124 Dark Green	Cycloramas – good for back lighting
126 Mauve	Cycloramas – good for back lighting
127 Smokey Pink	Cycloramas – set lighting, disco's
128 Bright Pink	Cycloramas – good for back lighting – strong effect
130 Clear	Used in animation and projection work
132 Medium Blue	Set lighting – travelling matt blue
134 Golden Amber	Set lighting – amber with a touch of pink
136 Pale Lavender	Set lighting – the subtlest of the lavenders
137 Special Lavender	Set lighting – lavender with blue overtones
138 Pale Green	Set lighting – less than half strength 121
139 Primary Green	Set lighting
141 Bright Blue	Set lighting – slightly darker than 118
142 Pale Violet	Set lighting
143 Pale Navy Blue	Set lighting – reduces intensity without too much blue
144 No Colour Blue	Set lighting
147 Apricot	Pleasing effects for theatrical lighting
148 Bright Rose	Set lighting – half the strength of 113
151 Gold Tint	Pleasing effects for theatrical lighting
152 Pale Gold	Set lighting – subtle warm effect
153 Pale Salmon	Set lighting
154 Pale Rose	Pleasing effects for theatrical lighting
156 Chocolate	Cyclorama cloths – ¾ back for dark skin tones
157 Pink	Dance sequences. (Useful for softening white costumes without affecting skin tones)
158 Deep Orange	Fire effect – sun sets
159 No Colour Straw	Warm effect – pale tones
161 Slate Blue	Set lighting – a very cold blue
162 Bastard Amber	Set lighting – half the strength of 152
164 Flame Red	Disco effect – developed for hell fire scenes
165 Daylight Blue	Set lighting – keylight for moonlight effect
166 Pale Red	Good for light entertainment
170 Deep Lavender	Set lighting – disco's – theatres
174 Dark Steel Blue	Set lighting – creates good moonlight shadows
176 Loving Amber	Set lighting – pale pink enhances skin tones
179 Chrome Orange	Combination of ½ CTO & double strength 104
180 Dark Lavender	Pleasing effects for theatrical lighting
181 Congo Blue	Theatre and television effect lighting
182 Light Red	Theatre and television effect lighting
183 Moonlight Blue	Theatre and television effect lighting
184 Cosmetic Peach	Pale tints complimentary to Key lighting
185 Cosmetic Burgundy	Pale tints complimentary to Key lighting
186 Cosmetic Silver Rose	Pale tints complimentary to Key lighting
187 Cosmetic Rouge	Pale tints complimentary to Key lighting
188 Cosmetic Highlight	Pale tints complimentary to Key lighting
189 Cosmetic Silver Moss	Pale tints complimentary to Key lighting
190 Cosmetic Emerald	Pale tints complimentary to Key lighting
191 Cosmetic Aqua Blue	Pale tints complimentary to Key lighting

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The 750 seat Max Bell Theatre, part of the Calgary Centre for the Performing Arts described by the Theatre Projects Consultants team in this issue. (photo Rick Schick)

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IS THERE A CANUTE IN THE HOUSE?

The year has not started well for theatre, and we are not referring to funding. Poverty, after all, is relative — unlike fire and flood which are absolute. Fire has ravished the New Tyne Theatre with its Victorian mechanised timber stage, and water has saturated parcels of printed ephemera awaiting transfer from the V & A to the Theatre Museum.

To perish by the flames is a familiar fate for stages and could even be regarded as a death more honourable than conversion to secular use. But drowning is an uncommon hazard for any theatre and is it not therefore odd that it has struck the embryonic theatre museum twice? If it were not for builders wayward water seeping into its proposed basement home, our Theatre Museum would already be open in Covent Garden and its treasures spared the bursting of that V & A temporary (!) water main.

Is this an omen? Should we really be putting our theatric heritage in a basement? Or will the government's property service agency succeed in a 'third time lucky' attempt to avert the activities of Neptune — who, let us not forget, was a pretty powerful chap in many classic dramas and operas.

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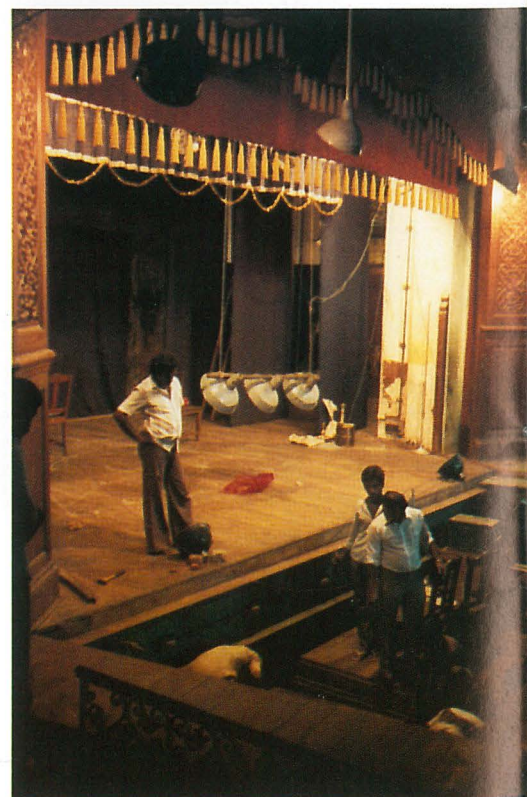
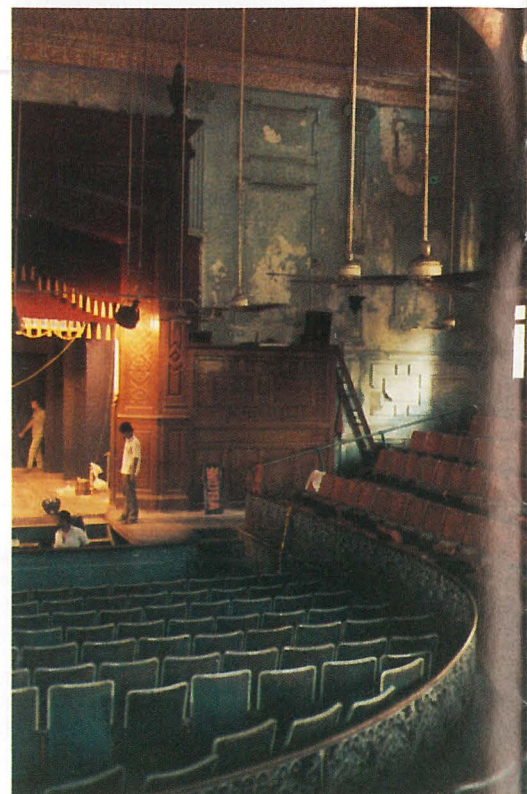
THE MUSEUM THEATRE IN MADRAS

FRANCIS REID returned at Easter from a three week passage through Southern India at the invitation of the British Council. In next CUE he will share his theatric impressions of Hyderabad, Bangalore, Madras, Trichur and Cochin. Meanwhile he reports on an example of Raj Theatre Architecture.

This theatre is not a museum. Its name is derived from its location within the museum compound: it was built in 1895 as an extension of the Madras Museum which had been established in 1846. The Museum Theatre is in regular active use for performance. The building is virtually unchanged since opening night and I believe it to be an important part of our international heritage of theatre architecture. It is of particular importance to British theatre history because, from its inception until 1969, it was the home of the Madras Players, an amateur company who

presented the hit west end plays and musicals from London.

The history of the Society from 1900 is recorded in a hefty set of minute books. The final entry is a letter, dated 12th October 1976, from the British Council 'accepting responsibility for their safe keeping and making them available for perusal by bona fide interested persons'. After a few years the combination of absence of such bona fide persons and the alarming rate of possibly contagious decomposition of the volumes made the Madras librarian rather



reluctant to continue to allow them shelf space. Fortunately the Council's Cultural Activities Office, Grace Krishnaswami, recognised their importance and gave them sanctuary. This is important material, much too valuable to be let out of India, and there is a need for someone to go to Madras and earn their doctorate by researching. Furthermore it is a pretty safe bet that there is a lot more extant material on the Museum Theatre, perhaps in the Connemara Library on the museum site: the British imported into India a profound regard for the importance of the pen in recording exactly the sort of trivia that is the bones of history.

The books contain all the minutes of the meetings of the Society (handwritten until 1920 and typed thereafter) plus full records of the productions (programmes, press cuttings and photographs; even correspondence about royalty payment disputes). Letters from Government House indicate continuing patronage from successive governors-general. Gilbert and Sullivan were the staple of the early years — the first photographs are of the 1900 production of the *Sorcerer*. Gilbert was also favoured as a dramatist with early productions of his *Engaged*. The photographs show the development of scenery from wings and backcloths through full box sets to the curtains with inset doors and windows favoured in the 1930s — although by then revue was tending to supplant drama. The actors, however, remain formally posed throughout: these are not action photographs, although as the years pass there is some relaxation in the dignity of stance.

The accounts show the detailed expenses of the Society. 'Refreshments to band and police' is a recurring item as is 'Hire of lamps cost of reflectors'. But what occurred to occasion the expenditure of ten rupees on an 'extra grant to stage carpenter for medical attendance'. Surpluses went to charity although there were some fluctuations in fortunes with staff having to be laid off; and in the 1920s 'fancy dress costumes' were advertised as 'for sale cheap' — 50% off to members, 35% to others.

The building presents an elegantly curving verandahed facade in soft red brick matching the other museum buildings in their response to the greenery of the trees which are a prominent feature of the site. The semi-oval auditorium has a high domed roof. There are no boxes. Six rows of tiered seating curve around the central pit area

which is enclosed by an ornamental iron balustrade — my memory is uncertain whether it was wrought or cast, probably the latter. This pit houses eight raked rows with a centre gangway but the original elegant basket seating (a section is preserved in the greenroom) has been replaced by modern tip-ups covered in rexine.

The ornately carved timber proscenium arch is varnished and carries a pair of red velvet house borders, one straight and one deeply scalloped, both boldly fringed with long gold tassels. These borders and the seating may be the only features that are not original. The walls are unaltered and there is no reason to doubt that the decorative scheme, and perhaps even the actual paint, is original 1895. The plastered walls have relief column decoration and are painted pale blue. This gives way to warm ochres above the proscenium and the roof is dark grey. Traffic noise now prohibits the windows being opened for ventilation — a problem anticipated in a 1920s programme for 'Sailbad the Sinner' which carries a note

The Committee earnestly request that the audience will be seated by 9.30pm each evening, and that the owners of Motor Cars will kindly refrain from bringing them into the Museum Compound after the orchestra has begun, as the noise they cause seriously disturbs the audience.

Twenty five fans on rods from the roof form a 'ceiling' over the audience. Since these terminate at a uniform height, this 'ceiling' is set at from about six to sixteen feet above the audience, depending on the position of their seats on the tiering.

Acoustics are reported to be good and certainly seem so. However in 1922 a Captain Bellingham is minuted as suggesting that the carpenter and painter employed by the Dramatic Society should occupy their spare time in preparing a series of flats to be placed in the auditorium to improve acoustics. Some discussion regarding the exact situation of these flats resulted in Captain Bellingham being asked to meet the government architect Mr Nicholson at the theatre to discuss the matter. At the next committee meeting, Bellingham reported the result of his consultation with the architect, who agreed with his views, and it was decided that estimates should be prepared for the construction of two 30' × 17' screens and three borders across the roof. There is no further mention of the matter in

the minutes. Perhaps Captain Bellingham was posted.

The orchestra pit is in a style still to be found in Indian theatre of recent construction — substantially built in plastered brick rather than just a mere dividing rail. The stage has metal grooves for wings to slide and the current masking is dark blue material draped over very old scene painted calico. The dressing rooms in the wings have splendidly victorian ornate tables but there is no ceiling so they are acoustically linked to the stage. The fly rail (at stage level) is primitive. The proscenium arch has a disused vertical lighting batten built within it from batten holders screwed to timber divisions, and the tumbler switches of an early lighting board are labelled to convey such niceties as 'white light' and 'fly light'. The open knife masters are merely labelled 'danger', accompanied by a skull and crossbones.

This theatre must be preserved and fortunately there are proposals to do so. It would be a nice gesture if some British exporter, following in the spirit of the East India Company, were to sponsor the renovation work. The urgent need is to make the roof weatherproof. After that it is mostly a straightforward job of redecoration. Unlike most restorations of nineteenth century theatres, little research is required. There have been no significant alterations and so there are no 'improvements' to be unpicked, or evidence of original decorations to be sought by scraping away layers of accumulated paint.

Since traffic noise rules out open windows, air-conditioning will be required. But once the chilled air is inserted, its circulation could be left to a ceiling of fans at the existing height. They work so well in focusing the stage: bringing a touch of intimacy to the vaulted height of the auditorium, yet preserving its acoustic volume. They will also allow the necessary new lighting positions to be installed with an appropriate discretion. And somehow all these fans seem appropriate to the architectural ambience of turn-of-the-century Raj when the London west end was brought to humid Madras with not one collar unstarched.

I would dearly love to be at the re-opening night when I hope that, prior to curtain up, today's equivalent of 'Mr Dorswamy's orchestra will include Poet and Peasant, Marche Militaire and a selection of favourite Valses'.

CALGARY QUARTET

This CAN\$79m Arts District in downtown Calgary, Alberta, comprising two theatres, a concert hall and a restored 75 year old vaudeville hall, is the biggest overseas arts project ever undertaken by a British team of consultants. Theatre Projects were a driving force from concept in 1978 to opening in 1985. The four key men — Richard Pilbrow, Iain Mackintosh, David Staples and Jerry Godden — tell their own stories of opening, designing, planning and equipping The Centre.

OPENING THE CENTRE

Monday, 16th September 1985, the morning after the Gala Opening of the Calgary Centre for the Performing Arts, had been announced as an 'Open Day', with brunch being provided for members of the public who might be interested to see their city's new Centre.

Coffee and croissants for a thousand were in readiness at 10:00 AM. But by that time 3000 Calgarians were waiting in line and the refreshments had already gone. That number swelled to over 12,000 by 3:00 PM and the end of the queue had to wait three

hours to get through the doors. People had to be asked to come back next week for a repeat 'open house'.

The preceding day had been an extraordinary one for Martha Cohen, Vera Swanson and Sandra LeBlanc, the three ladies who were the spiritual heart and the financial muscle of this enormous venture. They had been dreaming about the Centre for 12 years and at last it had arrived. For Theatre Projects people too, who had been involved since preparing the initial feasibility and planning studies in 1978, it was a moving moment. The Gala had been a triumphant occasion but the sight of thousands of patiently queuing Calgarians fascinated to

see what excitements lay within the Centre was a unique comment on the building and its promises for the future.

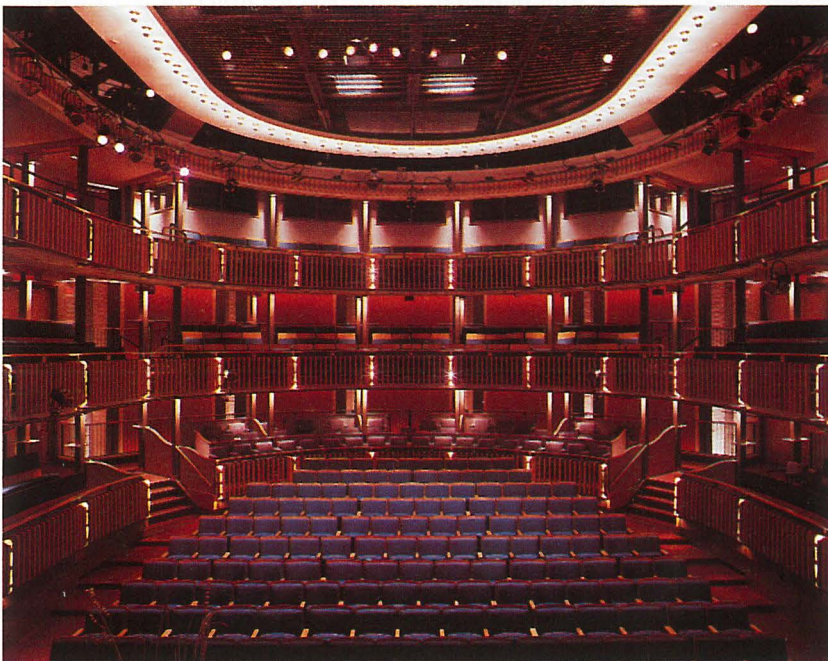
The Gala concert had been a glittering affair. Bejewelled ladies had represented the cream of Calgary society. The two hour performance of symphony, choral works and ballet, staged in the Jack Singer Concert Hall had been hosted by John Neville and broadcast live on both TV and radio across the whole of Canada. Directed and choreographed by Brian Macdonald, the evening had been designed and lit by myself. The telecast ran two hours and finished to the second, but behind the seemingly effortless performance the team backstage at the Centre knew of the monumental struggle they had been through in those last few weeks. For opening was not only the great

Fish-eye lens view of the 1800-seat Jack Singer Concert Hall showing the 32 tonne acoustic canopy at its symphony setting. (photo Rick Schick)





The 750-seat Max Bell Theatre, home of Theatre Calgary. (photo. Rick Schick)



The 450-seat Martha Cohen, home of Alberta Theatre Projects. (photo. Rick Schick)

Concert Hall, but, within the same week, the Max Bell Theatre for Theatre Calgary and the Martha Cohen Theatre for Alberta Theatre Projects.

In 1978 Theatre Projects recommended that Calgary, one of the fastest growing cities in Canada, build an Arts District for their orchestra, two resident theatre companies and the public. A whole downtown city block was available and it was proposed to build a symphony hall with, as the highest priority, fine symphonic acoustics, two theatres of differing size and character, together with the necessary workshop facilities, administrative offices, dressing rooms and rehearsal spaces.

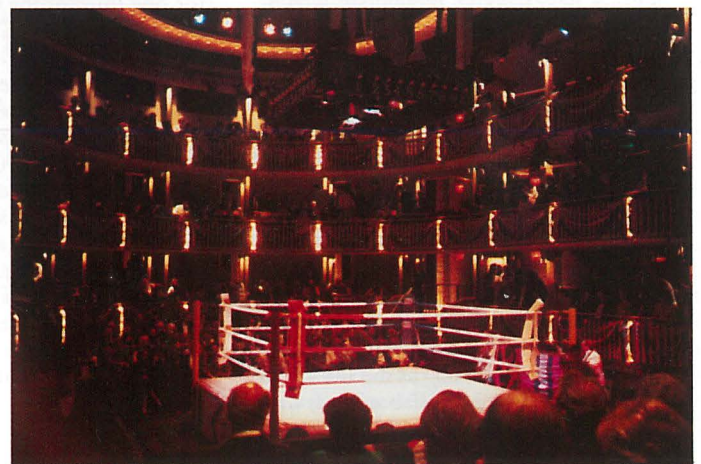
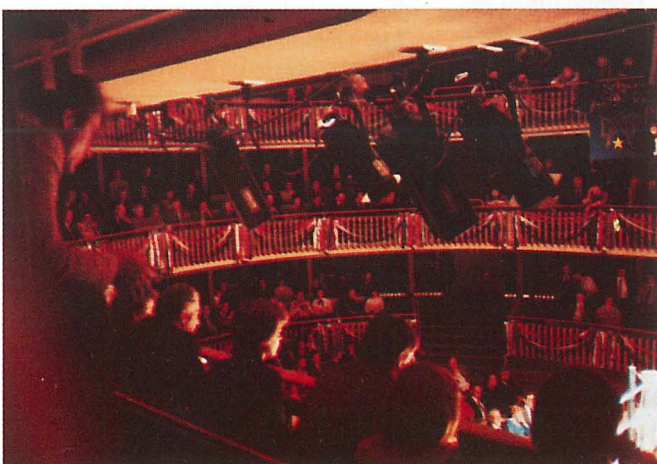
In the public areas, which were deliberately intended to encourage informality, intimacy and a variety of experience, were also areas for restaurants, bars, cafes and retail shopping to provide at least an element of commercial underwriting for the performing arts.

The plan was a bold one for Calgary. To build state-of-the-art performance facilities for music and drama that would match any other in Canada. The problems were formidable and the cost of \$79 million substantial.

The three ladies, through their perseverance, eventually raised \$16 million from the private sector (more than has ever been raised for an arts building anywhere in Canada) with the remainder coming from the provincial, city and federal governments.

For the first audiences it was clearly a great time to be a Calgarian. They read in pride Harold C Shoenberg, the doyen music critic of the New York Times, describe the symphony hall as "one of the greatest in the hemisphere". Brian Brennan, the Calgary Herald critic, described one theatre as "a modern theatre that draws on the traditions of the past . . . an impressive space, large yet intimate" and the other as "a miracle of intimacy and warmth . . . the perfect play-house".

As with all projects for the arts, time alone will prove the popularity of the building. The theatre companies and the orchestra have responded with great enthusiasm to



The 400/450 seat Martha Cohen Theatre rearranged as Theatre-in-the-round for the opening production of Trafford Tanzi in September 1985. (photos Richard Pilbrow)

the new challenges. Everyone is aware of new possibilities and new opportunities. There are new challenges for the artistic directors — Michael Dobbin, Martin Kinch and Maestro Mario Bernardi, the administrators — Doug Laughlan, Marcia Lane, Charlotte Green and John Shaw, and the technical directors — Edsel Hilchie, Ray Ackerman, Lloyd Fitzsimmons and Dave Stephens.

Since the opening the theatre companies have each opened five further productions and are playing to full houses. The symphony has settled in and the Centre itself has booked in a wide variety of events — from ethnic dance to modern punk as well as celebrity recitals by international musicians. Across the newly pedestrianised Eighth Avenue an open air park is being created for the Medal ceremonies for the Winter Olympics. Watch your screens in February 1988, you may catch a glimpse of the Calgary Centre for the Performing Arts.

R.P.

DESIGNING THE PERFORMANCE SPACES

Calgary made the first approach to Theatre Projects in summer 1978. Producer Lucille Wagner of Alberta Theatre Projects (no connection — our first instinct had been to sue) arrived at Long Acre for lunch. Lucille was serious: Calgary, then the fastest growing city in North America thanks to the Alberta oil boom, aimed to have the best Arts Centre in the world and certainly one better than neighbouring Edmonton which had just opened its John Neville inspired Citadel Theatre. Calgary had chosen to look to London rather than to Toronto, New York & Los Angeles for its advice.

Richard Pilbrow, at the time somewhere west of Los Angeles, was diverted to Calgary. Calgary sent more emissaries to London including Brian Brennan, the drama critic of the Calgary Herald and Doug Riske, Lucille's partner as Artistic Director of ATP. We travelled to Calgary, the city where skyscrapers grew overnight — they poured 30 floors in 20 days or 20 floors in 30 days, I never could remember which. They wanted their Arts Centre immediately, guessing perhaps that the good times would not roll forever.

In 1983 the Calgary boom changed into depression quicker than anywhere else as the price of oil slipped through the threshold that makes Albertan oil even less attractive commercially than North Sea oil. The centre was built in extraordinarily difficult circumstances with cuts being imposed as the job proceeded. But that is another story. The conceptual design of the two theatres and the concert hall took place while the good times were still rolling as did the initial design development in collaboration with Calgary architect Joel Barrett. There was, marvellously, sufficient time to visit other theatres on both sides of the Atlantic, to make models and to discuss the philosophy of theatre and of theatrical design with our user clients.

Concert Hall

The Concert Hall was modelled tightly on the classic narrow but high shoe box halls, principally the Musikvereinssaal of Vienna and Symphony Hall, Boston. We persuaded the management of the Calgary Symphony down to 1,800 seats plus 200 choir stalls, thus significantly increasing the chance of acoustic success that eluded, say, the 2,630 seat Avery Fisher Hall in both 1962 and 1976. (At the same time we argued Theatre Calgary from 1,000 to 750 and Alberta Theatre Projects from 600 to 400/450 — cutting the size being often the most important thing a consultant can do).

Russell Johnson, the acoustician introduced by Theatre Projects from New York, made a preliminary model. Joel Barrett introduced a distinctive decorative scheme. A technical installation was then introduced to enable the hall to be used for a wide range of non symphonic uses without at any time disturbing the prime purpose which was to provide a natural acoustic for symphonic music. Jerry Godden deals with this elsewhere.

Max Bell

The larger of the two theatres, the Max Bell, shows a pedigree which may be obvious to some. In 1976 the similar size Eden Court Theatre Inverness had opened with the walls papered with people right down to the stage picture by way of boxes 'en escalier'. This feature, of the audience grasping the stage as in an eighteenth century opera house or Elizabethan courtyard had been my own small contribution to this magnificent theatre created by architect Graham Law. We visited Inverness, we being Joel Barrett, TP in house architect Neil Morton and myself. It was Richard Pilbrow that suggested the feature which makes the Max Bell unique: the 'caliper' five end boxes on each side. These are mounted on pivots and can be raised off the ground on air castors to allow movements of the sides of the auditorium to vary the width of the proscenium.

The artistic need for this device was Theatre Calgary's wish to work on a thrust for one third of the time, Guthrie thrust being an important Canadian tradition since the foundation of Stratford, Ontario in 1953. (In 1980 there was no thrust stage west of Stratford although ironically Theatre Projects has since helped create one in Edmonton, the 700 seat Maclab theatre.) In response we created a theatre with sight lines from all levels to the tenth row of the orchestra (=stalls) so as to allow the seating and staging in this area to be re-arranged in conjunction with caliper boxes. In addition to a full thrust stage it is possible to create a full width apron forestage, additional seating or a range of orchestra pits (this will be a wonderful theatre for musicals, chamber opera or dance).

Although there have been more than one changes in the artistic leadership of Theatre Calgary from conception to opening the thrust of the design has remained consistent. Indeed the only serious moment came in

December 1983 when it was seriously suggested by the cost controller that a flat ceiling should be substituted for the carefully sculpted design developed by Joel Barrett from Neil Morton's original model. On TP's behalf I had to put my foot down in the only major confrontation of the whole project.

Martha Cohen

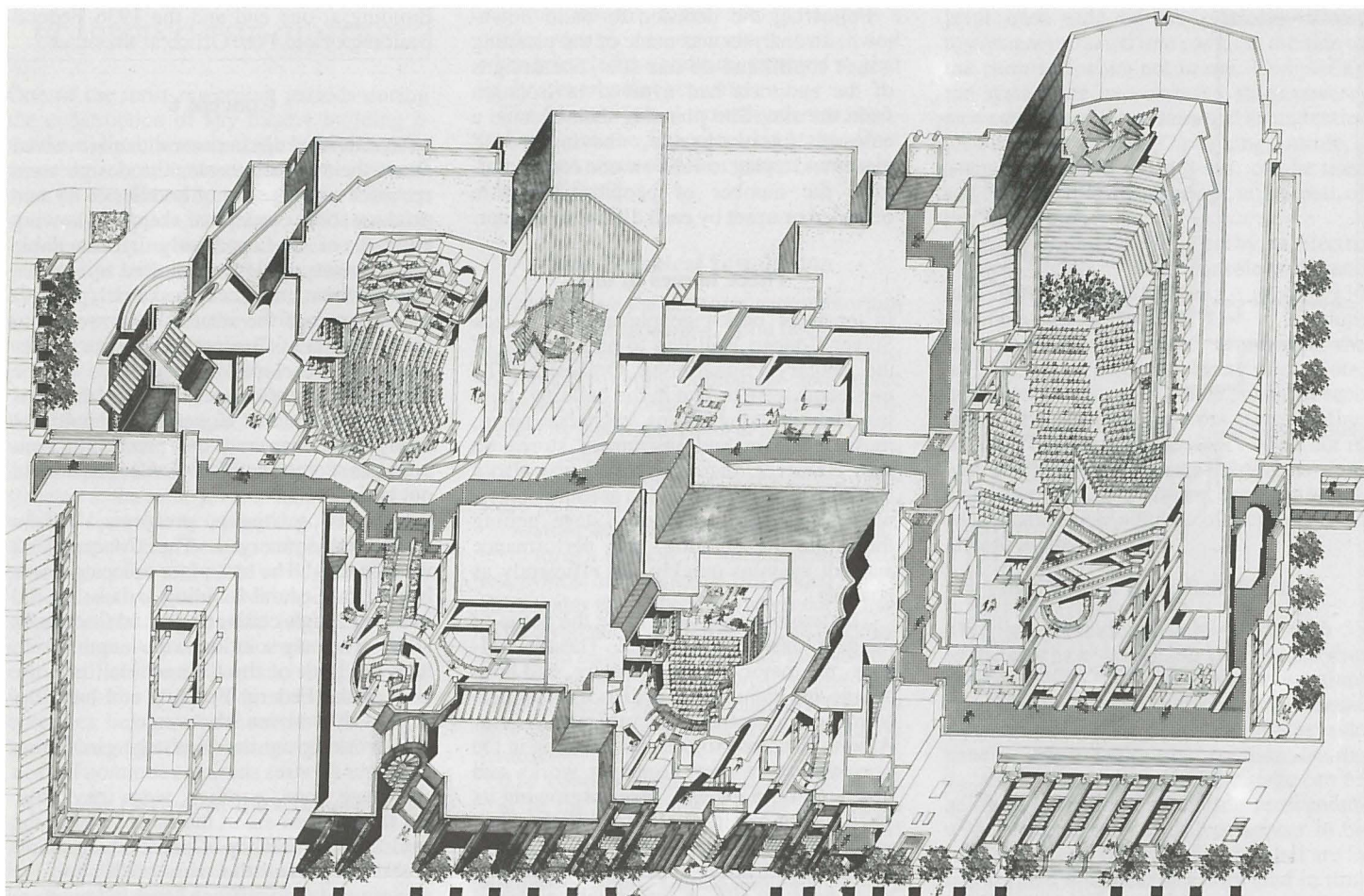
ATP's new theatre was the result of the closest possible collaboration. Lucille and Doug saw the Cottesloe in promenade, liked its vitality but were doubtful of its appropriateness to a city which, while being prepared for experiment, also demanded comfort and fine finishes for its long awaited arts centre. Christ's Hospital and the then new Wolsely in Ipswich were visited: more cheerful but still the product of rectilinear geometry. The key building turned out to be the Theatre Royal Bury St Edmunds (1819). Transpose this timeless classical harmony to Canada, transmute the style and the materials and we would have the solution.

To this was added the concept of placing the horseshoe auditorium within a space — shades of the Royal Exchange — hence the fact that the horseshoe of three tiers stands off from the surrounding scalloped brick wall. This way an improvisational element would be retained with the theatre as a structure created for the occasion. There would also be an opportunity for scenery to be hung around the back of the auditorium. Unfortunately the concomitant treating of the stage house as part of the same space by lining it with the same brick as surrounded the audience was an early cost casualty along with the original design of central and raking stage elevators. The first directorate of ATP had brought in conventionally minded technicians more interested in a miniature opera house arrangement of full width stage elevators.

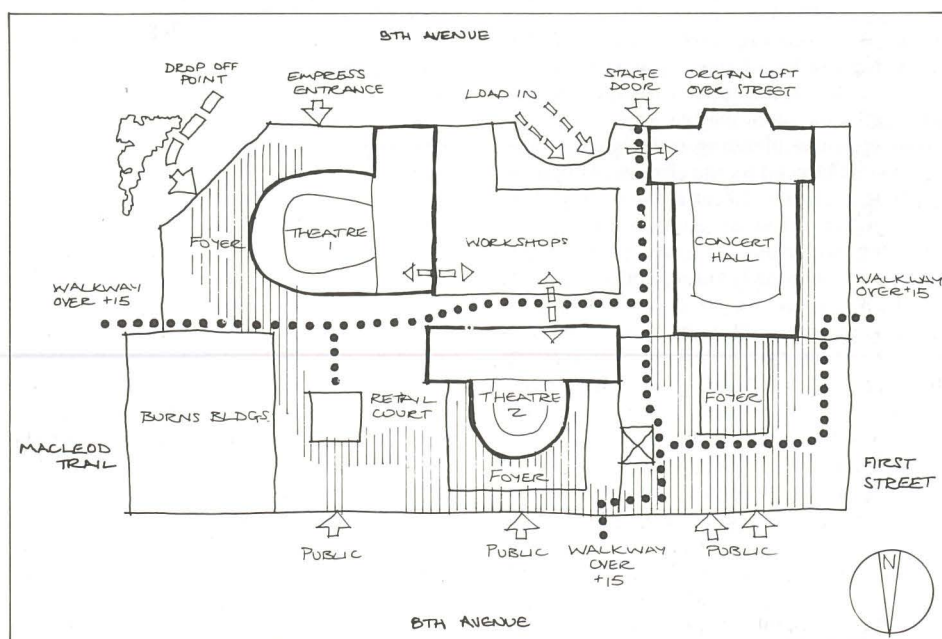
As so often, the directorate changed before the theatre opened. The commitment of the current director, Richard Dobbin, to innovative staging was signalled from the outset with a production of 'Trafford Tanzi' played in the centre with seats on all four sides of the ring. The Martha Cohen theatre under Dobbin's direction will certainly live up to the ideals of its founders in encouraging new writing and innovative staging.

The Empress

Back to the beginning. In 1979 we arrived in Calgary fresh from the re-opening of the 1895 Lyric Theatre, Hammersmith. We were amazed to discover on the chosen site behind a run down drug store a furniture store which was in fact an old theatre miraculously preserved from 1911 — and 1911 is old in Calgary. This was the Empress, a small rectangular vaudeville/recital hall with no proscenium but an elegant ironwork gallery and a deeply moulded interior treatment complete with ionic pilasters and a pressed tin ceiling. To the surprise of our hosts and consternation lest we disturbed imminent site purchase we



Axonometric drawing of the CAN \$ 79m Calgary Centre for the Performing Arts seen from over the Olympic Park across Eighth Avenue; the Concert Hall is on the right behind the retained 'Heritage' building which provides lobbies and administrative offices plus separate City Departments on the top floors (Drawing by Joel Barrett)



Sketch Site Plan

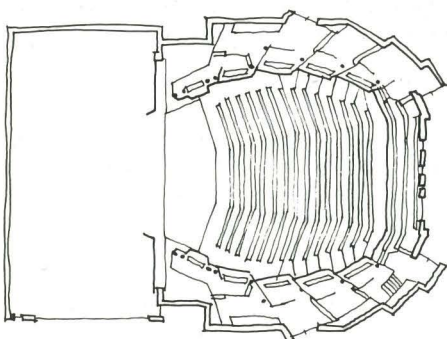
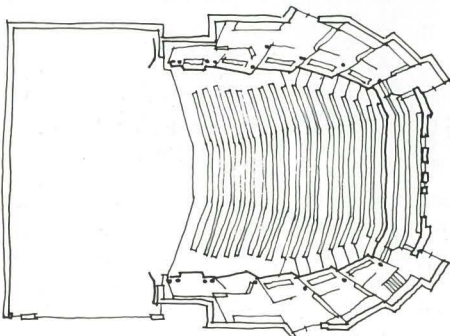
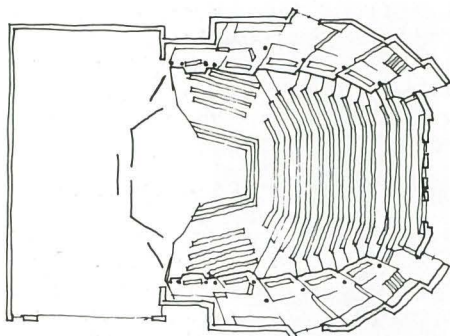
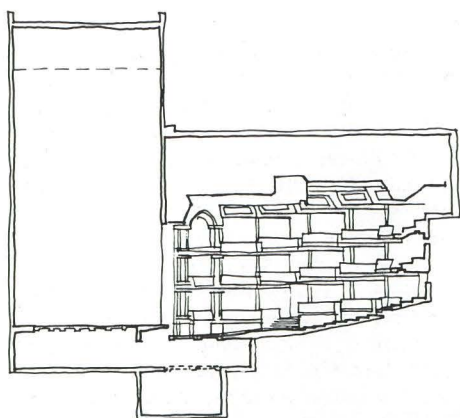
penetrated this marvellous interior posing as the Chairman of the CURTAINS!!! committee and other 'scholars' from London.

On our advice the interior was dismantled and, in planning the Centre space for a yet to be reconstituted Empress, was carefully reserved. The shell has been completed along with lobby, lavatories and its own street entrance. Needed is Can \$1.5m to recreate the 250 seat auditorium and stage as the fourth performance space in the Centre to serve as the venue for recitals, lectures, film shows and the sort of children's show which the theatre companies now take to high school gymnasiums across the Province. It seems just possible that the Empress will reign again in time for the Winter Olympics to be held in Calgary in February, 1988.

I.M.

PLANNING THE CENTRE

The integration of the Calgary Centre for Performing Arts into a tight urban site represents a movement away from the "Civic Monumental" performing arts centres or complexes of the last twenty years, such as the Barbican or the Lincoln Centre in New York. It was the desire of the client and the aim of the architects and designers to put the arts back into an urban context which relates them to the life of a city and to create an arts district of the complexity and richness of say, London's West End or Broadway rather than one of the somewhat sterile monuments of recent decades.



Three of the many possibilities for rearranging the 750-seat Max Bell; a flexibility achieved by operation of the innovative air castor caliper boxes as well as the more usual forestage elevator.

An early decision in planning the centre was to choose the site. Two were possible. A green field site, located in the landscaped grounds of the local community college was offered, as was a fairly tight one-block downtown site. Calgary already had a Jubilee Auditorium, seating 2718, built in the mid-1950's, which was located on the top of a hill and accessible only by car. The downtown site was accessible by car, bus, light rail transit system, foot, or even horse if desired.

Following the decision to build downtown, an analysis was made of the planning issues confronted on this site. The designs of the auditoria had evolved in isolation from the site. Site planning then became a colossal jigsaw puzzle, moving round pieces and trying to see how one could minimise the number of people who were offended or upset by each different concept.

Three homes in one

In terms of backstage planning, the Jack Singer Concert Hall was to be the home of the Calgary Philharmonic Orchestra. The musicians were to live in the building, having their dressing rooms, rehearsal room, music libraries and instrument stores on site. However, the concert hall was also a touring venue with a need to accommodate a wide range of uses on its open stage, getting them into the building, into performance and out again as quickly and efficiently as possible.

The two theatres were to be the home of resident theatre companies. Theatre Calgary, the major repertory theatre, had built a large and enthusiastic audience for its performances in its tractor factory cum theatre. Alberta Theatre Projects, specialising in the presentation of new Canadian works and new writing in general, was outgrowing its 167 seat log cabin at Heritage Park. They also were to become resident in the Centre, with their offices, rehearsal rooms and workshops on site. A major debate ensued about the advantages of shared or separate workshops, and after three years debate a decision to proceed with shared facilities was taken.

Constraints

As if the backstage issues and constraints were not sufficient, front-of-house there were a whole host of issues to address. The companies were adamant that each of the spaces had to retain their own identity and also have its own major street entrance. Front of house planning in Calgary is also heavily influenced by the climate. When the temperature hits -20° or even -30°C , you don't hang around window shopping, admiring waterfalls or civic plazas. You want to get into the building and to the coat-check as quickly as possible. To counter these climatic conditions, the planning department in Calgary had in the 1960s ordained that all buildings in downtown had to have a $+15'$ bridge connection to each of the neighbouring buildings on all four sides — an imaginative solution which leaves city life visible in contrast to the secret and subterranean malls used in other northern cities such as Toronto.

In attempting to make the project into a true arts district rather than an arts centre, and to provide amenities and facilities which would draw the public into the building for 18 hours a day rather than three hours a day, it was decided to incorporate retail and restaurant spaces into the centre. Finally, in terms of site constraints, were two immovable heritage buildings: the 1908 Burns

Building at one end and the 1936 Federal Building or old Post Office at the other.

Concept 6

After extended discussions with all involved about their requirements, the design team retreated into a series of huddles to try and produce some conceptual sketches showing how all of the apparently irreconcilable requirements could be balanced to achieve the optimum result. The sketch (page 9) shows some of the issues which went into the evolution of Concept 6, which was subsequently developed as the basis of the design for the Centre. The fact that this drawing is labelled Concept 6, should not imply there were only five preceeding concepts, concepts 5A, 5B, 5C, 5D, etc, should not be ignored.

In solving these problems, others undoubtedly emerged. The Concert Hall was too long! The best place to locate it was behind the Federal Building and use the old building's high-ceilinged ground floor as its lobby. The only solution to the length was to tuck the back of the Concert Hall into the wall of the Federal Building and hang the organ loft out over 9th Avenue.

In working out the backstage circulation with four theatres sharing a common load-in and stage door, conflicts were inevitable. All three stages are at the same level as the load-in and workshop. Conflicts were minimised by putting the main circulation for performers and staff one level below stage and goods level.

Noise control became an issue not only with mechanical spaces but also with centrally located workshops. Although attempts were made to increase the distance of the critical stages and auditoria from the workshop this was not possible on the tight inner city site. The solution was structurally to isolate the auditoriums and the workshops/mechanical block from each other by building completely separate foundations and structural systems.

In the front-of-house areas, each theatre does have its own public entrance off the street. The Concert Hall is entered through the lobby of the old Federal Building off 8th Avenue, as is the Martha Cohen Theatre. The Max Bell Theatre has a driveway drop-off from Macleod Trail, while the Empress Theatre has its own separate entrance on 9th Avenue. All the accesses to the theatres are linked by a multi-level indoor mall, which passes through the centre of the retail court. This also provides connections to the underground garage and $+15'$ bridges for access to the neighbouring buildings, some yet to be built.

When the Centre for Performing Arts drawings were submitted to the Design Review Panel of the City of Calgary, one member commented critically that the building looked as though it was designed from the inside out. Subsequent vehement comments in the press from the staffs of the arts companies convinced The Panel that that was the correct way to design a performing arts building!

D.S.

EQUIPPING THE CENTRE

One of the most rewarding periods during the construction of any theatre building is the time when the technical crews take over from the consultants and contractors and start to use the equipment. In this Calgary was no exception, and July 1985 saw the crews occupying their spaces determined to get to grips with their new equipment. With opening dates less than two months away and to prove that they meant business, various areas of the complex were occupied prior to building completion.

The Calgary complex houses three stages: two theatres arranged around a central workshop core and the concert hall, the stages and the main loading dock being constructed at the same level to assist the movement of scenery and equipment. The central workshop comprises a carpentry shop, painting, props and metalwork facilities.

Located two floors above the stages are two rehearsal rooms, one for each of the companies. Adjacent to these is a fully equipped costume shop including dyeing facilities, the day-to-day maintenance of costumes being carried out in a wardrobe room alongside the dressing rooms.

Acoustic Devices in the Concert Hall

Although primarily designed as a concert hall, the 1800 seat Jack Singer Concert Hall has been designed to accommodate a wide range of events: popular music, open stage opera or dance, headliner acts, films, conventions and almost any other popular entertainment that does not need either a full theatre flying system or a proscenium.

The acoustical environment of the hall is adjustable by a series of devices provided primarily to tune the hall for a wide range of symphonic repertoire: Mahler and Wagner requiring different acoustics to Mozart. The principal device is the acoustic canopy suspended above the platform. This can be raised or lowered to tune the hall to the scale of ensemble performing and maintain the correct balance between different sections of the orchestra. The canopy construction consists of steel channels beneath which is suspended a shaped acoustic surface formed of laminated timber. The canopy which weighs some 32 tonnes is suspended by a series of wire ropes and balanced by counterweight cradles located in shafts in the walls on either side of the hall.

The canopy also incorporates concert and production lighting luminaires and has a large opening trap door through which the sound cluster passes. A control panel at stage level provides information on the height of the canopy and the status of the load cell detectors and other safety interlocks. Of particular interest is the access ladder formed of a series of telescopic sections each with its own protective safety hoops, the ladder links the roof void above to the canopy over a distance of some 14m.

The walls of the hall are lined with acoustic banners and curtains made of heavy lined velour. When extended this soft

material absorbs sound energy to give a deader acoustic environment to the hall and when retracted the walls are exposed to give lively, reverberant acoustics.

The banners are electrically driven, controlled from the SM panel on stage. Cost saving had meant that the curtains have to be drawn by hand.

The Technical Installation

Located above the platform and auditorium are a series of motorized point hoists which can be utilized to suspend trussing systems to support lighting equipment and scenic elements. The hoists may be remotely controlled by a portable panel at platform level.

The platform itself can be extended through the use of three screwdriven fore-stage lifts. These can also be used to create orchestra pits of differing sizes and at stalls level form a support for simple seating pallets which are manually off-loaded into a store under the auditorium when not in use. (The original design for castored seating pallets on rails was deleted as a cost saving, already proved to be unwise as the time taken to move the seats manually is probably ten times that required to move them on castors).

The control room suite is located at the rear of the auditorium at stalls level. This comprises a sound room, broadcast/SM room, lighting room, and radio broadcast equipment room. During the gala opening the TV and radio crews were delighted to make use of these in-house rooms and of the cable ducts to the loading dock.

The in-house sound system speakers consist of the already mentioned suspended sound cluster. This is lowered electrically to its operating height and is usually used in conjunction with two side wall speaker towers that track out to a position at high

level each side of the platform. These towers are retracted into rooms at the side of the choir loft when not in use. Completing the system are two castored stage towers, side and rear wall speakers and an under tier enhancement system. The mixing console, a Soundcraft 800B, 32 in 8 out, can be used either in the control room or at the rear of the stalls level.

Stage lighting is controlled by an Electro Control 'Celebrity Plus' console with hand held remote control facility. A total of 130 dimmers (26 × 50 amp, 104 × 20 amp) feed luminaires, located throughout the hall, primary positions being roof slots, under tiers, canopy and three positions each side of the platform for cross stage lighting which are hidden behind doors when not in use. Concert and House lighting is controlled by a separate system, access to which is available at a number of key positions around the hall.

The 750 seat Max Bell Theatre.

This has a traditional stage tower with 55 single purchase 450Kg line sets and a flying height of 20m. The size of the proscenium opening is adjustable by means of an electrically driven header panel and sliding side panels. Additionally the position of the audience boxes adjacent to the stage can be adjusted to trim to any chosen proscenium width. The boxes themselves appear to be just like the rest of the auditorium but are in fact formed of a steel structure clad in timber and dryliner. Movement of these pivoted boxes is achieved by the use of air castors located on the base of the box structure. Working on the same principle as the Hovercraft, air is forced into the castors causing the entire box unit to rise off the ground. With the unit floating, the boxes, which weigh approx 10 tonnes, can easily be moved by two stagehands.

The stage floor, plywood on timber beams covered in black lino, has a fully trapped playing area downstage of which are located a screw driven elevator and a further removable pit area. When either the elevator or removable section are in use the seats are removed on pallets and stored. Originally designed to have two elevators, the second became a victim of cost reductions. The remainder of the stage rigging is fairly standard with the exception of the safety curtain which is formed of a woven glass fibre material.

Lighting and Sound at the Max Bell

Control rooms for the lighting and sound systems are located at the rear of the stalls. An early design decision was taken to go with a dimmer per circuit. Cost comparisons proved it to be more economic to do this as well as far more satisfactory from a lighting designer's viewpoint — allocation of control channels to dimmers being selectable at the lighting console. The theatre has a total of 352 dimmers (328 × 20 amp, 25 × 50 amp) controlled by the new Electro Control 'Premier' console with a 'Celebrity Plus' auxiliary/back-up console. The system is complete with a designers remote and hand held remote unit. The Electro Control console was a late change from the previously bid system by Colortran, the client deciding against our advice that the sizable deduct offered by Electro Controls was too good to turn down. So, at a late stage in the building programme, we found ourselves with an untried control system with much of the software to be written. In fairness to Electro Controls the end product is quite acceptable although making a major change to an untried product does

little for the users' confidence or the consultants' blood pressure!

Auditorium luminaire positions are primarily located in two lighting bridges in the sculpted ceiling with additional positions in the moving boxes and tier fronts.

In common with the standard Canadian/US practice, power to luminaires hung from pipe sets on stage is via multi-conductor cables fed from grid to stage level. This is a very neat solution as blocks of circuits in drop boxes can be moved about to suit the requirements of a show. That being said, 120 volts does do terrible things to the size of your cables and it is not unusual to find a standard trailing cable the size of a garden hosepipe!

The sound system consists of side and rear wall speakers, Bose 802 side proscenium speakers and a fixed cluster centred above the proscenium. The console is a Soundcraft 800B, 14 in, 8 out. A portable SM desk with 3 channel ring intercom, paging mic, cue light controls, etc. can be used at either stage level or in the FOH Control Room.

The 400/450 seat Martha Cohen Theatre

Here one is struck by how compact everything is. Interestingly, there is very little difference between the cost of the rigging equipment in this space and the Max Bell Theatre. The original concept for the floor area comprised a raking stage elevator, one downstage elevator and a levelling auditorium elevator for the entire stalls floor zone. Using these elements it was to be possible to form a number of differing stage levels and rakes and produce a flat floor throughout the theatre for promenade per-

formances. Following the bid returns a decision was taken to replace the auditorium elevator with demountable rostra seating units and delete the raking stage elevator. A second downstage elevator and three simple table elevators have also been introduced by the user, these latter alternatives being a change in taste rather than budget.

The problem of providing fire separation between the stage and auditorium was made more complicated by the fact that one of these elevators was to be located beneath the safety curtain. This was eventually resolved by fitting a fabric fire curtain beneath the elevator which moved with it thus providing a seal beneath stage level. In addition to the main proscenium width safety curtain above the stage, a secondary curtain was designed, fitting within the main curtain. This secondary curtain fills in the gap formed by the lowered elevator once the main curtain has reached stage level.

The stage tower is equipped with 37 single purchase 450Kg line sets and has a flying height of 17.5m. The aspect ratio of the proscenium is adjustable by means of a framed header and a number of sliding side panels which retract into the side walls when not in use so as to allow the Martha Cohen to be used as a one space theatre.

The lighting control is the same as the Max Bell, a total of 260 dimmers being installed (243 × 20 amp, 22 × 50 amp) together with a back up and designers console. Sound is again controlled by a Soundcraft console 800B, 24 in 8 out, located in a common control room on the third tier at the rear of the auditorium. This room is shared by the lighting console operator and stage manager, an approach that seems to work particularly well with this type of theatre.

Throughout the complex the Stage Rigging contractor is by Hoffend and Son, stage lighting control by Electro Controls and the stage sound system by International Aeradio Ltd.

The experience of working on a project of this magnitude is not something that one is likely to forget in a hurry. The overall process of design manufacture and installation of the technical equipment has taken over eight years to complete but the results are, on the whole, very satisfactory.

J.G.

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REIDing SHELF

ENGLISH MEDIAEVAL THEATRE 1400–1500 is the latest in the *Theatre Production Studies* that John Russell Brown has been editing for Routledge & Kegan Paul. I have enthused about previous volumes in this series, particularly in relation to the detective work by which staging techniques have been reconstructed from flimsy evidence. William Tydeman is the latest sleuth and his period is one which is particularly thin.

The emptiest gap in theatre history is that extending from the fall of Rome until the Renaissance. Indeed the absence of physical remains of theatre buildings has helped foster the idea that there was virtually no theatre during this time. However it takes rather more than the onset or aftermath of dark ages to kill off actors or audiences, and William Tydeman is not one to be put off by a shortage of clues: not only is he one of the leading analytical investigators of mediaeval entertainment but he has applied his researches to his work as a director of mediaeval plays. Many, perhaps most, of the plays of the 16th century have been lost, particularly the secular works which were not set down in written form at a time when writing materials were scarce. Sacred drama also fared badly, particularly when it later fell into the hands of zealous reformers.

Taking five remaining texts, this book identifies and discusses five staging methods: Booth Stages, Scenic Structures, Theatres in the Round, Processional Stagings and Great Hall Theatres. By analysing the text in relation to any hints available from other sources, the author makes convincing reconstructions of the performance methods. There has to be speculation but it is founded on a creative analysis that is very seductive in its logic. The author manages to convince me with most of his arguments. Certainly the whole broadening of our theatre experience as a result of the growth in fringe and street theatre has made an understanding of mediaeval drama more accessible to us than to many recent generations. I suspect that we are on the verge of exciting discoveries that will open up new theatrical experiences of an era that has been traditionally dismissed. This new book is an important key.

Peter Spalding begins the introduction to his **DRAMA IN PRACTICE** by telling us that 'This is a book for the use of students of literature and drama, especially those preparing for examination'. Well, if we have to have examinations (and I cannot imagine any subjects less examinable than the performing and visual arts) then this book will no doubt help. But its real importance is that it will assist its readers to *discover* a lot about the nature of theatre. This is a cata-

lytic book which places the student in structured situations which enable the dramatic text to reveal its meaning and purpose. Questions are asked, suggestions made, options identified and approaches indicated.

Eight classic dramas from Shakespeare to Bond via Chekhov, Wilde, Ibsen, Miller, and Brecht each have a chapter with a similar sequence of cross-headings that include discovering the nature and content of the play, preparing for the task, exploring the background, looking at characters and relationships, rehearsing the scenes and considering the practical staging problems. Under each heading there is information, discussion and, most importantly, positive suggestions for personal and group exploration.

If I taught drama, I am sure that I would welcome this book as a framework for group projects. And if I were a drama student, I would enjoy its stimulation. But if I were a drama examiner, I hope that it would make me want to retire, because the strength of the book is that it will lead its more sensitive readers into illogical decisions. And the weakness of exams is surely that they can only really acknowledge, and therefore measure, logic.

There is no examination nonsense at the National Theatre School of Canada which is celebrating its first quarter of a century and, having been to Montreal seven times in the last dozen years, I am prepared to testify that the School has something to celebrate. The title of a commemorative book **L'ÉCOLE — THE SCHOOL** indicates the binary traditions of Canadian theatre and the alternating chapters in French and English mirror the structure of a bilingual school where study of these traditions is parallel rather than integrated. The chapters are actually a series of independent essays and editorial respect for the individual authors has perhaps led to these essays being a bit of an uneven miscellany. I have a hunch (which my linguistic disabilities prevent me from substantiating) that the French essays may offer more stimulation than some of the English ones, but the general flavour of the book and its illustrated record of past productions does provide an encouraging picture of the School's achievements based on aims established in line with the philosophies of its founding advisers led by Michael Saint-Denis. Canadian Theatre is moving towards an identifiable national style. L'Ecole Nationale can claim a lot of credit for the recent past and will have a growing responsibility (funding bodies please note) for the future.

The first edition of the **DONMAR REFER-**

ENCE MANUAL was greeted with a rave review in Cue and the ABTT endorsed our opinion by naming the manual as 1984 Product of the Year. The new edition builds on this success with an additional dozen pages to detail even more of the hardware of theatre technology. There is probably a book reviewer's Code of Practice that forbids me to comment on the new 4-page lighting section what I wrote. However, in declaring my interest, let me confide that I am rather proud of the basic kit of lanterns which can be rigged in different ways for drama or musical. It takes courage for designer and supplier to generalise in this way and so, if anyone is foolhardy enough to try these rigs, please will they write to share their joy or grief with us.

This is **THE** reference book for anyone desiring to fill the stage with fog (from a pea-souper to a minimalist) or gobos (267 variations pictured plus a service to make to your design) or drapes (choose from three styles of pocket) or confetti (me: I just can't wait for an excuse to use the Le Maître Confetti Cannon in a production). But, above all, this is the definitive information source for those who want something but don't know (or have forgotten) what it is called. The manual is full of useful street knowledge and I have found only one tip which I would question. Well, actually, I would violently disagree with a cyclorama cloth being "generally made of a white material so as to provide a neutral base for lighting" — in my experience unless there is at least a hint of blue pigmentation in the material, a cyc will refuse to go dark blue, making even quite saturated near primaries look like steels. But that's my only spotted flaw in a magnificent publication — where else will you find a table detailing the number of pieces of filter you can cut for 51 varieties of lantern from standard sheets of Lee, Cinemoid and Chromoid respectively?

ENGLISH MEDIAEVAL THEATRE 1400–1500. William Tydeman. Routledge & Kegan Paul (Theatre Production Studies Series). £25 (UK).

DRAMA IN PRACTICE. A Handbook for Students. Peter Spalding. Macmillan. £20 (UK) £3.95 (paperback) (UK).

L'ÉCOLE — THE SCHOOL. LE Premier Quart de Siècle de L'École Nationale de Théâtre du Canada/The First Quarter of a Century of The National Theatre School of Canada. Initiated and prepared under the supervision of Jean-Louis Roux, by Michael Garneau and Tom Hendry. Stanké.

DONMAR REFERENCE MANUAL for the Theatre, TV and Entertainment Industries. £2.50 (Donmar, 22 Shorts Gardens, WC2H.9BR.)

No Jargon and Much Good Acoustical Sense

IAIN MACKINTOSH

The art of acoustics is an arcane affair, the more so when its American priests decide to dictate the design of auditoriums. Decide to build a new hall or theatre, or 'fix' an existing unsuccessful one, and the first to be hired is an acoustician. Owner and architect are then instructed via graphically presented criteria and numerical expressions of optimum reverberation at this or that frequency. There is a jargon not unlike wine-speak which presupposes knowledge of the premiere crus: opt for too much clarity and there could be a steely-edge to the upper frequencies, better for Bartok or Stravinsky than Brahms or Mahler.

American acousticians are also super salesmen. Harken unto Messrs. Richard H. Talaske, Ewart A. Wetherill and William J. Cavanaugh in their introduction to *"Halls for Music Performance, Two Decades of Experience 1962-1982"* (published by the American Institute for Physics for the Acoustical Society for America in 1982): "A sizable number of first-rate facilities can be rapidly changed to accommodate a variety of events from music to drama by the use of such devices as movable walls or ceilings, demountable orchestra shells and adjustable absorption. It is easily possible to shift the emphasis from romantic to baroque during a brief intermission and, three or four hours later, to have the stage fully rigged for drama or opera". Oh Brave New World that has such Geniuses in't!

Europeans are less certain that a dogmatic attachment to a freshly formulated theory will result in instant success — the British

after all, invented the AIRO system of assisted resonance initially to correct the Royal Festival Hall and subsequently to sell to architects the world over, not to provide instant climatic change from Mozart to Wagner but rather to correct errors in the architect's original acoustical design at the touch of an electronic switch.

Europeans are by nature empiricists rather than theoreticians, preferring proven tradition to innovative theory. This is no more apparent than in the field of acoustics. However, the first empirical acoustician was an American, Wallace Clement Sabine, who studied the halls of Vienna, Leipzig and Amsterdam so as to arrive at what is still America's finest concert hall, the 1900 Symphony Hall of Boston.

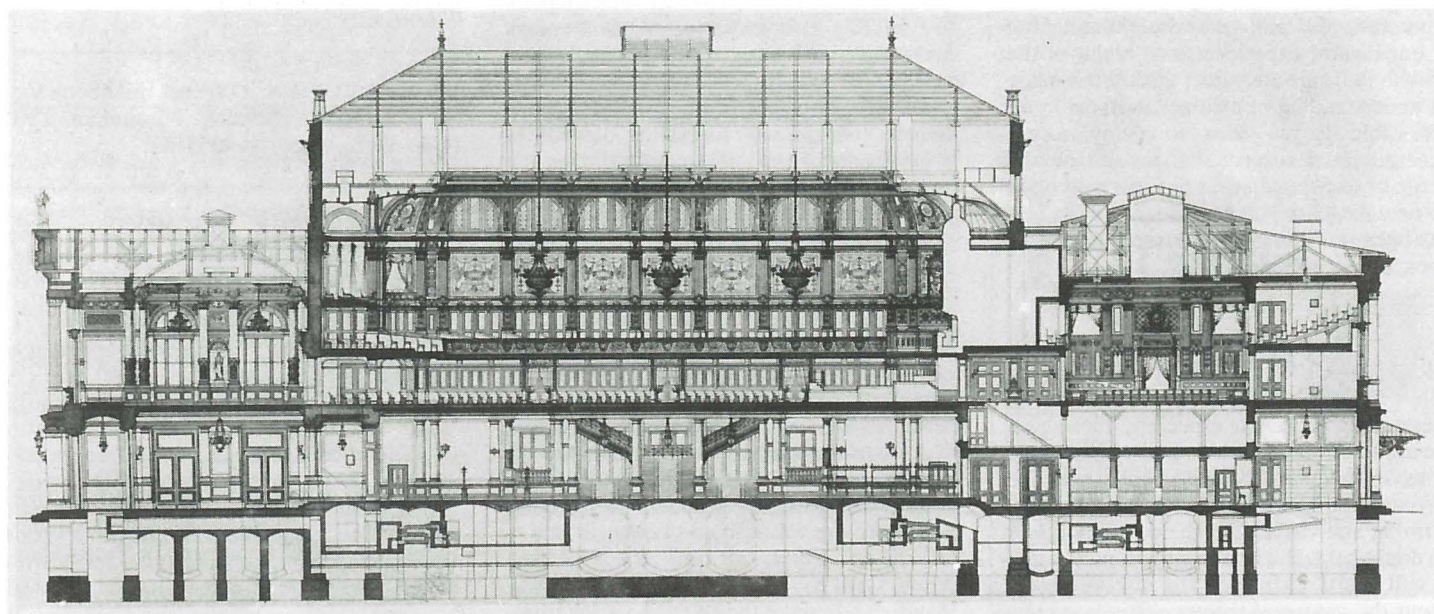
It was also an American, Leo Beranek, who in 1962 wrote what hitherto was the best survey of the acoustics of auditoria world wide, *"Music, Acoustics and Architecture"* reprinted in 1979 by Krieger Huntingdon of New York. Unfortunately this exemplary exercise in the empirical approach led up to a false conclusion in the shape of Philharmonic Hall at Lincoln Center, New York of 1962 which, by reason of its resounding failure, muffled the effect of what was and is a fine book that provides still unequalled parallel drawings plus statistical analyses of all major prior-to-1962 concert halls.

Acousticians and laymen alike, have had to wait a quarter of a century for a book of comparable standing. Author Michael Forsyth of **"BUILDINGS FOR MUSIC"**,

his publishers, MIT Press in America and Cambridge University Press in Britain, are to be congratulated. Even at £30 in Britain (and a better value of \$30 in America), with 370 pages and 252 illustrations, 16 in colour, this is a bargain and necessary reading for anyone who designs for, or works in the Opera House or Concert Hall. It is both well written and well-presented. No jargon, few graphs and much good sense gathered by observation.

Forsyth is a scholar, an architect and a near-professional musician who almost chose the music stand rather than the drawing board. A refugee from the break up of the School of Architecture at Bristol University, he presently flies the flag of their Department of Drama, having previously practised architecture in Canada. Forsyth worked on the Roy Thomson Hall in Toronto, at the crucial time when architectural *courturier* Arthur Erickson was struggling with the acoustical *armature* provided by Ted Schultz of Bolt, Beranek and Newman. Forsyth has travelled extensively although it is perhaps easy to spot those buildings he has experienced as against those which he has studied only in plan, photograph, or through second-hand account. But this is inevitable for anyone unable to put a girdle round the earth. Indeed a quick wander in the Antipodes would have established that the reason that at Sydney the concert hall was switched to the larger set of shells was not "design problems" in the flytower, as Forsyth suggests, but simply because the Australian

The epitome of the 'shoebox': the Neues Gewandhaus, Leipzig (1884) in plan (opposite) and section (below) from Buildings for Music by Michael Forsyth.



Broadcasting Commission had more clout than anyone else in the late fifties and would not accept the lower concert hall capacity had the smaller shells been chosen.

The sub-title, "The Architect, the Musician and the Listener from the 17th Century to the Present Day" signals his approach. Forsyth reckons some halls are so good for a certain sort of music that they influence composers, not only those that follow in a succeeding century but also those contemporary with the hall. Thus Haydn's symphonies, and there are over 100 of them, were written for orchestras of different sizes, from 16 to 59, the size of which were determined by the scale of the

very different rooms encountered by Haydn at Eszterháza, Eisenstadt and London. Nor is it just a question of scale but also character: Forsyth suggests that modern French provincial orchestras prefer playhouses to town halls for their symphony concerts because the shorter reverberation time is more in tune with French musical taste for "a brittle, dry but clear sound that to German ears may prove thin."

Those of us who run across acousticians (and often would cheerfully run over acousticians when they turn designer) will prick up our ears with pleasure at Forsyth's detailed account of the essentially theatrical tradition of the galleried "shoe box shaped"

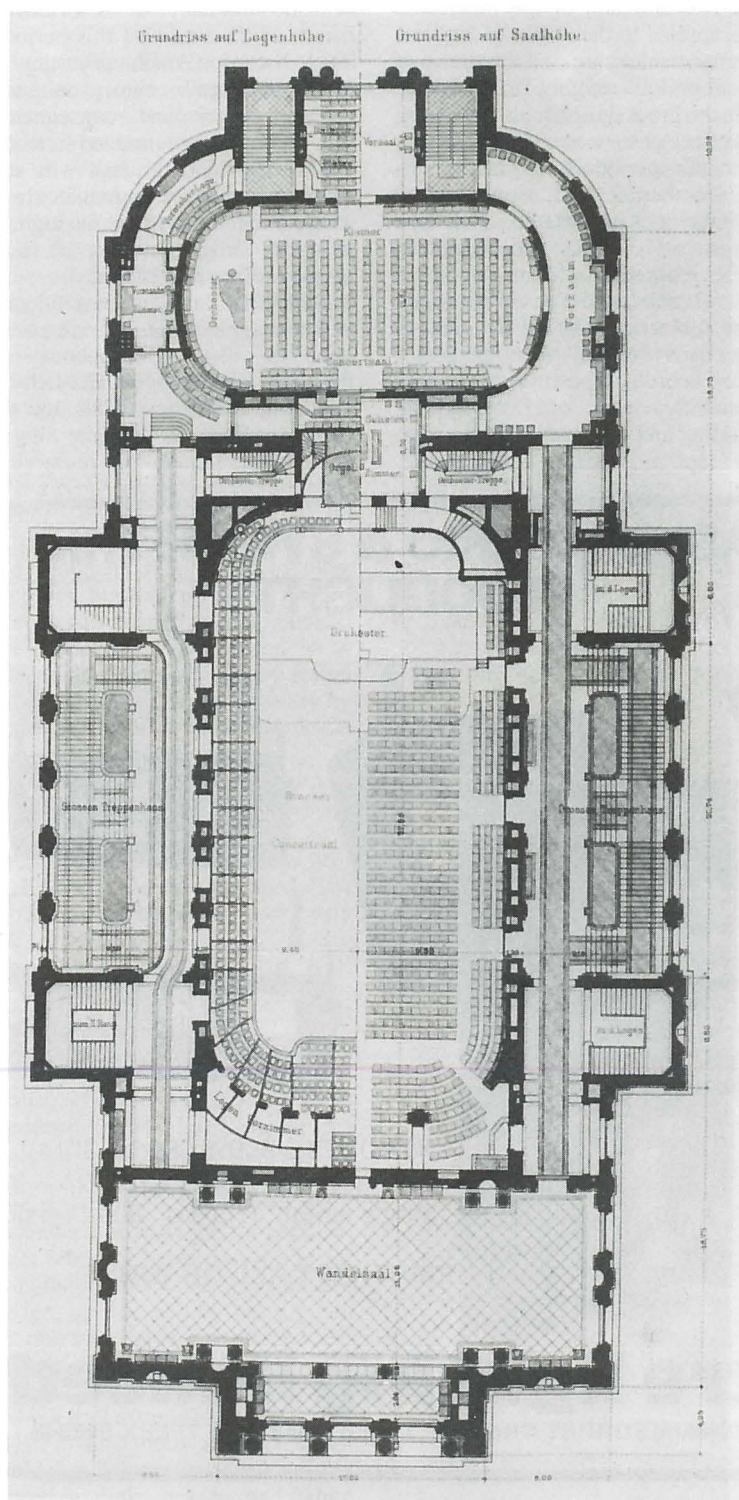
concert hall. Familiar stuff to some, but I certainly have not fathomed what it is that makes the broadly similar parallel walled Musikvereinssaal in Vienna different from the Concertgebouw in Amsterdam. (The first is Europe's finest concert hall for Mozart and the latter most conductors' favourite for the romantic). Forsyth sets out such differences and the similarities in word and illustration. He also unlocks the secret of the legendary Altes Gewandhaus Concert Hall of Leipzig (tiny and seated like the House of Commons) and the later and equally influential Neues Gewandhaus of 1884. About half way through the book we are beginning to guess what works and what doesn't from the illustrations alone, so clear is the logical thread to the argument.

Acoustics being so competitive today, there being more acousticians than opportunities, one inevitably turns to the chapters on the 20th Century to see how he rates current acousticians and their so very different routes to heaven. Forsyth is sympathetic to Beranek's tribulations on the Lincoln Center in 1962 (they added seats against his advice) and less than impressed with Cyril Harris's rebuild of 1976, described as "clear, precise and cool", to Forsyth and, one suspects, to most concert goers less exciting than the "warm rich and reverberant" Boston Symphony Hall. This judgement he then measures with "the ratio of volume to absorptive area", which at Boston is 39.9 and at Avery Fisher is 32.3.

On the Roy Thomson Hall (Toronto 1982) Forsyth is curiously non-committal, presumably out of loyalty to his former colleagues. He omits to state that half the retractable felt wool cylinders, the coloured ones "conceived as a three-dimensional tapestry" and providing the only colour in an otherwise steel and grey interior, had, like the glass globes in the ceiling at the Barbican Concert Hall, to be taken down to obtain acceptable acoustics for anything.

The best description of a modern hall is that devoted to the "surround" Berlin Symphonie Hall of architect Scharoun and acoustician Cremer, working together in rare harmony. How this extraordinary space works so very well has always been difficult to explain, most of all to the perpetrators of succeeding unsuccessful "surround" halls such as the ugly Boettcher Hall in Denver. Incidentally, it is odd to classify Boettcher with the Victorian Arts Centre, Melbourne as being "semi-surround" when the Denver hall, like the excellent new hall in Utrecht and the mammoth one in Mexico City (oddly omitted from the book), are full-surround while Melbourne is no more semi-surround than any 19th or early 20th century hall such as the Usher Hall, Edinburgh which have no more than 5% of the audience placed behind the orchestra in traditional "choir" stalls.

So encyclopaedic is the scale of "Buildings for Music" that one inevitably finds faults on the fringes of such an extensive view. Theatre historians will know that it is incorrect to say of the King's Theatre in the Haymarket (Vanbrugh 1705) that the "Lord Chamberlain gave it rather than the Drury



Lane theatre the sole right to produce opera and vice versa for drama at Drury Lane" when the second patent for drama, the Davenant one, was already in existence. Indeed it was the Davenant patent that was used to build the King's Theatre and was then transferred to the reopened Lincoln's Inn Field Theatre in 1714 before being passed on to the first Covent Garden theatre in 1732.

These are quibbles. The only real criticism of this magnificent book could have been not so much a shortcoming but a reason for a sequel. This is its comparative sparseness on opera houses post the Paris Opéra of 1875 and the Bayreuth Festspielhaus of 1876, magnificently compared in Chapter Five entitled "Garnier versus Wagner". In later chapters there is a fleeting reference to Bornemann's Berlin Opera of 1961 and to the competition for the new Paris Opéra at the Place de Bastille but none to the rash of new musical theatres created in America, save for a quick reference with illustrations of Izenour's push-me-pull-you Jesse H Jones Hall (Houston, 1966) now being replaced by a real opera house. The music theatre/opera house is not a dead form — more are being built than ever before. They do have to serve for dance, symphony and even Broadway musicals as well as opera and hence their design is a complex business. The do-anything approach via adjustable acoustics being sold

by the Americans (vide the second paragraph of this review) may attract building committees who would like to hedge their bets. Artists and audience are better engaged in thinking out what they want out of auditorium architecture. Forsyth approaches the problem of concert halls from the point of view of the latter rather than that of the former. This is very refreshing. But it is not easy. The joy of "*Building for Music*" is not only as a valuable source book but it also tackles the primary problems of design and tackles them in a lucid way. As an example take this from the introductory chapter:

"Let us for instance consider the opposing demands of two contrasting musical styles: the Romanticism of the nineteenth century, as applied to the works of Berlioz, Liszt, Wagner, and so on; and the music of the Classical period, roughly from 1750 to 1820, when the great symphonies of Haydn, Mozart and Beethoven were written. Music of the Romantic period is best heard in a relatively reverberant hall, such as the Concertgebouw, Amsterdam, and the Musikvereinssaal, Vienna. The blending effect of reverberance is like the brush strokes in an Impressionist painting, which obscure the subject so that the onlooker is induced to project his senses and emotions into the work in order to perceive the image. The shimmering music of Debussy, its colors sparkling and ethereal, even seems to

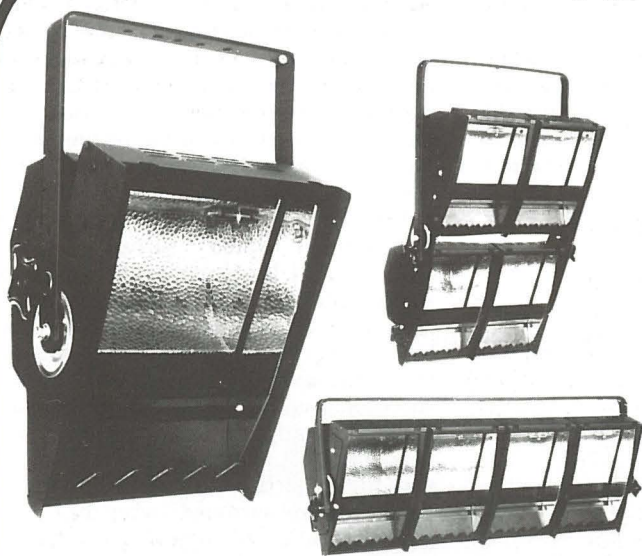
possess its own "built-in" reverberance.

"The formally structured music of the Classical period, unlike music of the Romantic era, which predominantly expresses emotion, has reason and clarity as its basis. The detail (such as ornamentation, which embroiders the basic melody and provides "lustre") and the subtler emotional characteristics of eighteenth century music were revealed to advantage in the smaller, often overcrowded concert rooms of the time, such as the Holywell Music Room, Oxford, and the Hanover Square Rooms, London, which were sometimes lined with thin wood, as was the Atlas Gewandhaus, Leipzig, where acoustic clarity was gained by a short reverberation time and extreme acoustic intimacy. It is evident that the nature of the music of this period calls for less "distortion" in the acoustics of the hall. In the nineteenth century, as concert halls became larger and consequently more reverberant, they remained suitable for such music, provided the hall was sufficiently narrow in width for there to be strong lateral sound reflections to retain high definition with the fuller tone, as at the Grosser Musikvereinssaal, Vienna."

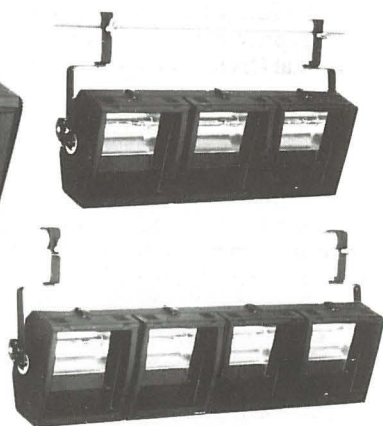
Hallelujah! Small is beautiful and the path to heaven is straight and narrow!

BUILDINGS FOR MUSIC, Michael Forsyth. Published MIT Press USA and Cambridge University Press. £30. UK.

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STAGE DESIGN

DAVID FINGLETON

Klingsor in a flying machine and some unalluring Flower Maidens at the Coliseum □ Royal Opera's Flying Dutchman, a rush job for the home production and design team □ Threepenny Opera gets the Broadway musical treatment at the Olivier □ Pride and Prejudice at the Old Vic creates Jane Austen's England perfectly □ Impressive realism by Carl Toms at the Lyttelton □ Good design at the Globe, Wyndhams and the Old Vic for three opera inspired plays admirably suited to the needs of each.

Why do Wagner's operas seem invariably to prove so problematical for stage designers? Clearly there is more to their staging than the bald choice between realism and slavish observance of Wagner's own stage directions on the one hand, and totally abstracted stylisation, as evolved by Wieland Wagner and others at Bayreuth during the 50's and 60's, on the other. Clearly too Wagner's operas, as much as anybody else's, are susceptible to director and designer 'interpretation', intended to make the audience look at and consider the work afresh. But all that said, why is it that, again and again, we are faced with stagings of Wagner operas that not only seem wilful and perverse, but also batter the eyes with ugliness and ineptitude? Wagner's operas by their very scale obviously pose greater problems to producers and designers than those of most other composers, but such problems are not insuperable, as was proved by that splendid Ring Cycle produced by Glen Byam Shaw and John Blatchley and designed by Ralph Koltai that was presented so successfully by English National Opera for many seasons at the Coliseum.

The two latest examples of the genre to have opened at London's opera houses could not in either case be said to have achieved visual success. *Parsifal* was produced for ENO by the distinguished East German director, Joachim Herz, previously responsible for ENO's *Salome* and *Fidelio*; and designed by the West German Wolf Münzner, who studied with Casper Neher and began his career as assistant to Wieland Wagner at Bayreuth. Münzner seemed to have adopted an approach that was stylised but not abstract, and of indeterminate period: medieval knights, but Klingsor in a flying bobsleigh or hang-glider. The stage at the opening of Act 1 was swathed in grubby green tubes which might have been plant stems seen under a microscope, or perished bicycle inner tubes, or intestines — one did not know. In their midst was a large cheese-shaped wedge, approached by more green tubes, and one tube hung irregularly, and rather forlornly, from the proscenium arch. The stage was a hydraulically controlled platform which rose to become the ceiling of the Grail Hall in a smoothly achieved transformation. In Act 2 the tubes remained, but now enclosed a pink, orange and white

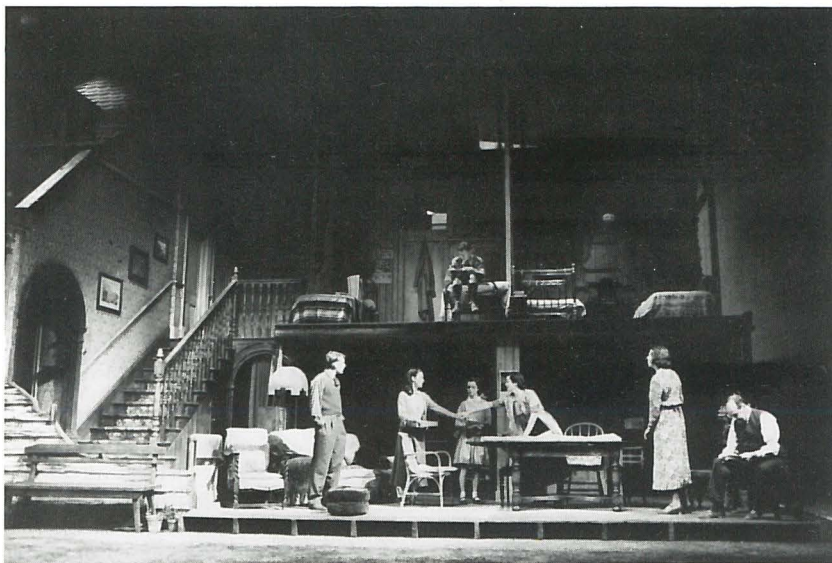
basket with a twisted wire handle which was the home of the Flower Maidens: Klingsor presided on his mirror-fronted apparatus above, and his somewhat unsteady progress by wire across the flies aroused titters from the audience. The Flower Maidens themselves wore bathing caps and ill-cut costumes, some had one arm painted — the effect was totally unalluring. The third act presented the same tubes now coloured grey, and this time the transformation was achieved behind a black drop curtain. This time round the Grail and its container looked even more makeshift than before and were even worse lit. The overall effect of the staging was one of tattiness and of concepts that had neither been fully worked out, nor fully executed. The designs did nothing to heighten our perceptions of the opera, nor were they pleasing to look at; they therefore achieved sadly little.

Those for the Royal Opera's production of *The Flying Dutchman* at Covent Garden were no better. In this production the

original production and design team of Tarkowsky and Tommasi had withdrawn, leaving the home team of Mike Ashman and David Fielding only three months in which to think out and execute their scheme for the opera. This may explain the appalling visual muddle with which we were presented on the opening night. Here we had not only a degree of stylisation, but also of politicisation, plus a 20th century setting which seemed to swing arbitrarily between the present and half century ago. Presumably the opening scene of Daland's and the Dutchman's ships confronting one another was intended to convey realism: that it failed to do so was due to the ineptitude of execution rather than the concept. Senta's workshop was ugly anachronistic and absurd, and the final act setting a shoddy travesty of the music drama that was played before it. Once again a hydraulic stage was employed here for nautical effects, but in the absence of any coherent or meaningful design scheme, its cavortings went for little.



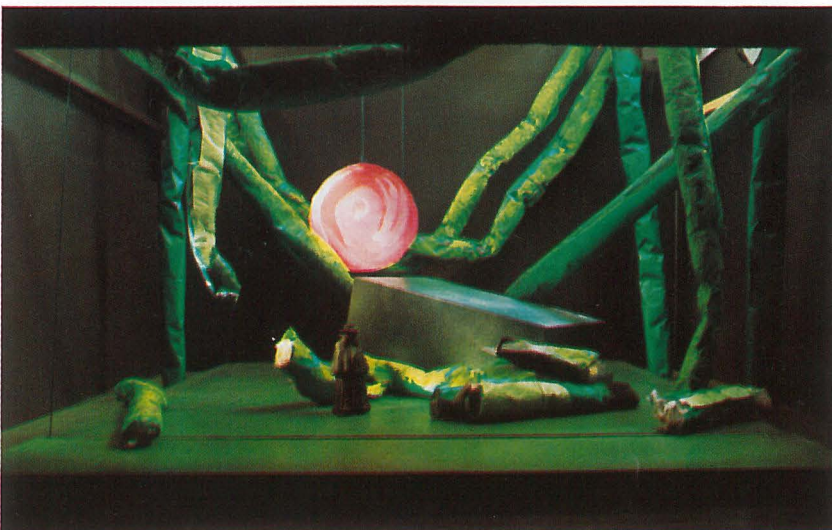
National Theatre's *The Threepenny Opera* at the Olivier. Director: Peter Wood. Designer: Timothy O'Brien. Musical Director: Dominic Muldowney. Photo. Zoe Dominic.



Carl Tom's settings and Lindy Hemming's costumes for Michael Rudman's production of *Brighton Beach Memoirs* at the Lyttelton Theatre. Lighting by Leonard Tucker. Photo. John Haynes.



Terry Parson's hotel setting for Ken Ludwig's farce *Lend Me A Tenor* at the Globe Theatre, Shaftesbury Avenue. Photo. John Haynes.



Model for *Parsifal* Act 1 by designer Wolf Münzner. Produced by Director Joachim Herz for English National Opera. Photo. Donald Southern.

Opera was also the principal offering recently at the National Theatre where the Brecht/Weill *Threepenny Opera* took the stage at the Olivier. But sadly, though undoubtedly better executed, this yielded little more satisfaction than either of the Wagner productions at the two opera houses. When a few years ago the National staged *The Beggar's Opera* in the Cottesloe, directed by Richard Eyre and designed by John Gunter, the production was, from every point of view, an enormous success. Why the same venue and team were not chosen for *Threepenny Opera* I do not know, but I do know that by choosing the huge Olivier auditorium to present it postulated a large-scale Broadway musical treatment, and from director Peter Wood and designer Timothy O'Brien that is precisely, and tragically, what it received. In O'Brien's glamorous designs this winsomely ingratiating production aimed for decoration at all costs. The stage surround was painted red, there were dinky little settings moving constantly about on trucks, steeples and other familiar landmarks were flown in and out, there was an antiseptically sexy brothel and a cinematic chase across the rooftops. Costumes were clean and bright and chorus work was crisply drilled. In the closer, less imposing confines of the Cottesloe all might have been different, but here all the punchy abrasiveness of Brecht and Weill, all cutting edge was sunk by the all-enveloping tide of West End entertainment.

How refreshingly different were Poppy Mitchell's admirably skilful, yet blessedly simple, settings for David Pownall's adaptation of Jane Austen's *Pride and Prejudice* which came to the Old Vic via the Cambridge Theatre Company, the Birmingham Repertory Theatre, and the Leicester Haymarket. Ms Mitchell's striking scheme of translucent grey screens, impeccable period costumes, impressively accurate furniture and props, allied to the skilful and highly sensitive lighting of Mick Hughes — those cameo silhouettes were magnificent — placed emphatically before our eyes, and in our minds, the England of Jane Austen far more effectively than any amount of scenic hardware. This is what creative stage design is all about, and Ms Mitchell almost invariably seems to achieve it. Yet her work is all too rarely seen in London, her last major London production being the RSC's original production of Peter Nichols' *Passion Play* at the Aldwych some years ago. How perverse are West End tastes. Back at the National, in the Lyttelton this time, realism was once again to the fore in Neil Simon's *Brighton Beach Memoirs*. But in the hands of Carl Toms it was realism impressively achieved.

In Michael Rudman's strong production Carl Toms' careful reconstruction of a two up, two down lower-middle class Jewish family home in Brighton Beach, New York in 1937 had a powerful sense of impoverished solidity and properly strong European overtones. Furniture and props were precisely right and Lindy Hemmings' costumes similarly accurate. But as I faced this four



Café Puccini at Wyndhams. Designer: Tim Goodchild. Photo. Michael Le Poer Trench.



Bob Crowley's setting for Welsh National Opera's After Aida at the Old Vic.



Royal Opera's Flying Dutchman. Production and design team Mike Ashman and David Fielding. Photo. Catherine Ashmore.

square, single solid set through the whole performance, I was still left wondering how the play might have come across in an altogether simpler, freer and more stylised staging.

Finally came a trio of operatically inspired plays. At the Globe *Lend Me A Tenor* is a rather good bedroom farce in an operatic context, and as the one genre of theatre that probably cannot get away without a realistic setting is bedroom farce, it was just well that Terry Parsons was on hand to provide one. This was especially fortunate in that the piece is set in a hotel suite and clearly Mr Parsons is a dab hand at hotels — witness his fine sets for *Two Into One* at the Shaftesbury recently. Here his brief was the best suite in the best hotel in Cleveland, Ohio in 1934, and with its overdecoration, fake Louis XV furniture, oppressive mouldings and daunting wallpaper and light fittings it was a masterpiece of its kind. It also served the needs of the farce impeccably with its invisible dividing wall between the two rooms and strategically placed bathroom and clothes' closet doorways. At Wyndham's there was Robin Ray's *Café Puccini*, a slight and unsatisfactory piece which not even Tim Goodchild's inspired spoof of the Café Momus could do much to rescue, and to the Old Vic came, courtesy of Welsh National Opera, Julian Mitchell's altogether more interesting study of Verdi, *After Aida*. For this Bob Crowley's setting was altogether simpler: just a derelict section of the stalls during a rehearsal session, with broken-up rows and piles of discarded plush seats, looking down on the stage with its rehearsal piano. All very well and good and serving admirably the needs of the play, but why on earth was it set, as appeared from the costumes, during the 1920's? The play concerned the period of Verdi's later life, in the 1880's, during which he was persuaded to write *Otello* to Boito's libretto, and is emphatically set in that period, presumably with the intention that we should believe in it. I could just understand a decision to place it in a contemporary setting instead, but why on earth a different period one — it seemed to bespeak an unjustified lack of confidence in the raw material.

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ABTT TRADE SHOW AND CONFERENCE

Riverside Studios March 20th to 22nd 1986

BOB ANDERSON

Riverside Studios, late March, the ABTT Trade Show. Fifty four Stands, a few newcomers, but mostly lots of old friends. A now familiar formula working well and, by and large, what the industry wants. Year by year the ABTT settles down to becoming a predictable event without entirely losing the travelling fairground atmosphere that has distinguished the event from the overtly commercial sales jamborees of other industries, and still, despite recent rival enterprises, the only London exhibition for the entertainment industries.

The ABTT, a voluntary organisation with some 1500 members from all parts of the theatre business, is 25 years old this year and celebrated its silver jubilee with a conference run concurrently with the Trade Show to look forward to the next 25 years. The two events together offered an unequalled opportunity to find out where theatre is going and what it thinks about itself.

Trade Show

Lighting and lighting related products again dominated the exhibition, even though four companies exhibiting last year failed to appear in 1986. Despite appearances, the ABTT organisers do try to encourage a wider spread of products but, with the sound people somewhat inhibited by the difficulty of demonstrating their powers of reproduction and having exhibitions of their own, the lighting organisations and their agents book the majority of the space available. Presumably this reflects the profitability of these businesses and results in a welcome contribution to ABTT income from stand fees.

Lighting control consoles have always offered up-to-date technology harnessed to the problems of theatrical effect. **Strand Lighting** have been among the world leaders for many years and improve their product with commendable regularity. Extensive world wide sales, both to theatre and television justify this policy. No new systems this time but well thought out improvements to the **Galaxy**, **Gemini** and **Tempus** range to keep the opposition on their toes, and opposition is never lacking because the subject seems to be a near irresistible challenge to hardware and software manufacturers and investors from all countries. 1986 saw the first appearance of the Belgian firm of **Adrien de Backer (ADB)** at Riverside with their **S28** control, and improved systems from **Eurolite** and

Zero-88, all following the mainstream tradition of rehearsed performance memory controls, and **Touchstone** returned with the perfected version of the prototype shown in 1965. **ADB**, represented in UK by **White Light**, are a major European manufacturer who have designed their system to statistical data obtained from extensive user surveys, and say sales in major theatres and performance spaces are justifying the result. **Eurolite** package circuit boards manufactured for an international market with software to suit UK needs. Their **Micron** and **Microlite 200** systems can control up to 240 dimmers, or 480 with soft patch with either digital or analogue outputs. **Zero 88** have repackaged their popular **Eclipse** system for touring and introduced **Mercury**, a low cost disco control that allows hands-on or automatic operation. **Touchstone**, striving for a combination of low cost and versatility combine 15 direct access touch operated faders with shift to up to 60 dimmers, soft patch expansion to 240 dimmers and master controls allowing full manual or automatic operation. This small company has joined up with **Pan-Can** to provide control for dimmers and the **Pan-Can** movement systems and hopes to attract customers from both the straight theatre world and for pop concert lighting. Already well established at the top of the pop lighting world are **Avolites** and **Cerebrum Lighting** who showed very similar systems optimised for the live performance techniques suited to the big spectacular lighting rigs toured by the top rock bands. Both use two or three preset sliders for up to 90 dimmers and twenty or more masters allocated by memory to give instant access to several hundred preset effects. Chase effects work direct onto these masters with near limitless complexity. **Avolites** now offer up to 180 direct control channels and both companies can discuss software or hardware based control patch for bigger rigs. The kits are complete with sophisticated dimmer packs and cable systems all packaged in flight cases to survive the one night stand life of the pop show circuits. The differences between straight and Pop lighting controls are narrowing rapidly and all users must now look at both sides of the market in their search for the optimum solution to their needs and preferences. At the simplest end of the market the **Pulsar** program for the BBC home computer first seen at the ABTT North Trade show offers worthwhile facilities at a very low price and complements their larger system range.

This year there were few developments in the dimmer field although circuit breakers are quietly replacing fuses on the more expensive product and nearly everybody can accept digital inputs. By contrast, 1986 was the year of the moving light. **Pan-Can** again showed their established position as pioneers of the moving mirror technique with new computer control that can be programmed to converge all beams to follow the artist as well as to give the familiar swinging, sweeping, multi-colour effects linked to the beat of the music. Moving mirrors were also fitted to **Coemar** spotlights for the same application but also with colour filter selection and gobo/iris control from the same computer. **Strand** have also decided to enter this market and showed prototype pan and tilt yokes fitted to PAR lamps with roller type colour change, all oscillating noisily in time to recorded music. A quieter approach to the same problem was shown on the **Light Works** stand who had an elegant add-on motor drive yoke to suit most 1kW or 2kW profile spotlights and a fully motorised fresnel with all barn-doors as well as focus, pan and tilt motorised. Control was quiet and can have theatre standards of aiming accuracy and memory presetting. Again, perhaps not by coincidence, this company has developed a roller type colour changer that should be able to match the facilities from **Strand** or the earlier American designs. The **Varilite** challenge has been accepted and probably already won if cost is the determining criterion. 1986 and 1987 should see some designers extending the use of this equipment to art theatre lighting and, if the results seem worthwhile, reasonably priced standard systems could start to appear in the catalogues.

Lighting control techniques must also, surely, have influenced the sound control system from **MS-Audiotron**, a manufacturer from Finland. Their control designed for tape effects and limited mic-inputs uses microprocessor techniques to capture routing and speaker grouping to simplify the performance of the most complex effects in a performance space. Cues are numbered and stored for sequential recall exactly as lighting has done for many years, and the tape machines are slaved to wind forward or back to set up the required track automatically whatever the progresses of the rehearsal. Output was claimed to provide sound images that could be located convincingly in any part of the auditorium. Sound managers crowded this stand questioning the

representatives and seeking demonstrations. Has another breakthrough arrived at last?

Other sound specialists were **Cable Technology** offering many types of made up cable and connector components and **Spectrum Audio** who make intercoms and the well known **Tipspot** wireless lighting remote control and increasingly specialise in equipment and system design for PA systems for large complex spaces. **Technical Projects** showed further additions to their intercom systems seen at earlier trade shows. **Sennheiser** had new radio microphones and infra-red systems on display.

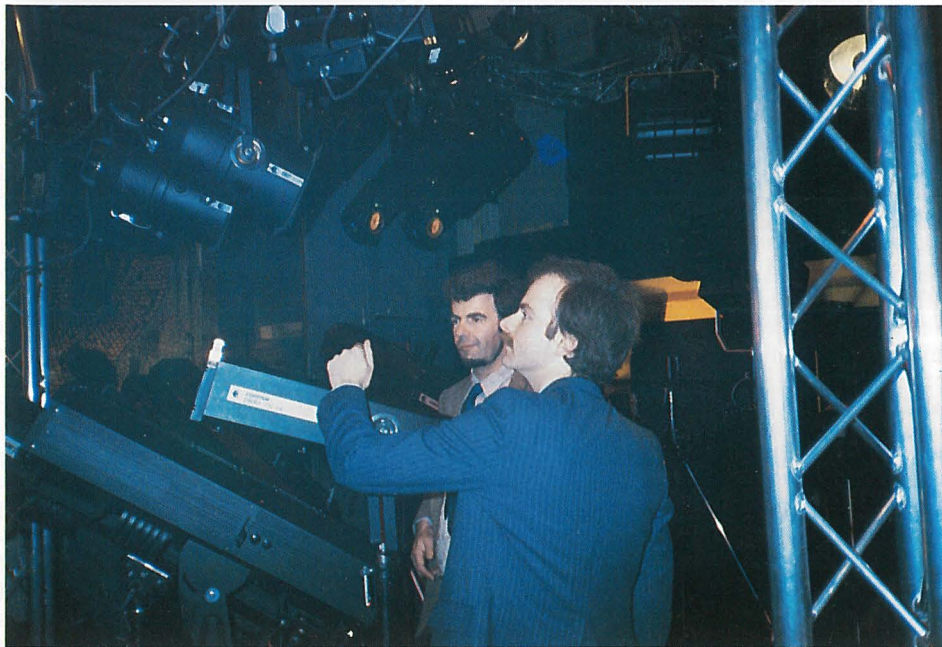
Inevitably, other manufacturing developments proved less spectacular. **Northern Light** have extended their range of integrated socket boxes and stage management cue panels. **DHA** have added to their already extensive range of precision gobos and also showed fibre optics and flexible electro-luminescent materials fitted with dimmers and flashers ready for fixing to pantomime costumes. Product of the Year award was presented to **Slick Systems** for their **Lite Beam** truss system, both for elegance and because the makers had paid close attention to safety and to testing and providing loading information for their product. New tab track developments appeared on several stands including **Foy Inventerprises** who use extruded aluminium section for curtains and for flying people, and Keith Edelstein of **Triple E** who uses square tube welded into four-square configuration for low cost, light weight and ease of transport. Both feature 'backfold' runners. **Hall Stage Products** showed their familiar proven systems and other stage accessories. Newcomer **P.L. Parsons** showed rostra tops manufactured to a 4ft. module designed to fit onto scaffold tube legs, both horizontally or at a tilt. **R.A.T Manufacturing** showed their now familiar high tech offset music stands.

Back again to lighting; (there really was a preponderance of this product) **De-Sisti UK** and **Coemar** shared a stand and showed a wide range of follow spots, disco effects and specialist television luminaires. Both companies have plans to enter the theatre market in the near future. **CCT Theatre Lighting** presented their full range of spotlights and introduced new floodlights with safety glasses and automatic disconnection so that the lamp must be isolated before it can be reached for replacement. This seems desirable for schools and may be required by European and British Standards in the near future. **ADB** also showed this feature on one of their new spotlights and both **CCT** and **Strand** now fit it as standard to all their spotlight range. For those willing to pay a bit extra for a brighter beam and better focus from gobos both **CCT** and **ADB** offer a condenser optic profile option based on their 1kW designs. **Action Lighting**, **Valiant** and **Specialist Lamps** all offer a wide range of lamps for theatre equipment with **Action Lighting** including flickering candle effects and rope lights and **Specialist Lamps** offering colour filters and some studio lighting equipment.

Rosco have introduced five new colours



Peter Kemp addressed the Conference on the design and manufacture of stage machinery.



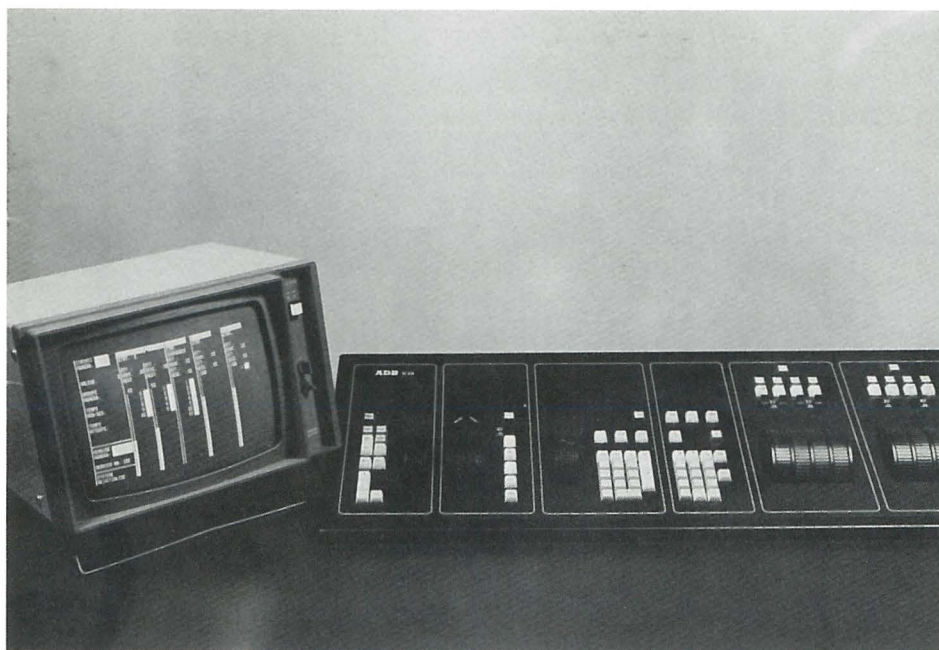
Demonstrating the Coemar spotlight fitted with moving mirrors.

to their already extensive range of colour filters and have a new plastic sheet floor material and three new fog machines. **Theatre Flooring** were also present to advise on their range of Harlequin floor systems and **Craig-Lough Associates** showed single sided and a new double sided floor product. **Le Mark Self Adhesives** provide tape to join and seal flooring sheet and for many other purposes. Smoke machines were also a feature of the **Le Maitre** stand who also showed their range of stage and outdoor fireworks and safety firing systems including a fully computerised system able to fire a complete pyrotechnic performance.

Scenic suppliers and manufactures included **Nairn Scanachrome** with exam-

ples of the jet printed colour blow-ups used in theatre and display. **Flint Hire and Supply** stock paint and theatrical hardware and have devised improved cleats and hinge pins. **Packman Research** showed samples of their vacuum formed scenic panels and the familiar snow machine. **N & I Costello** showed slash and shimmer curtains and metalised self adhesive sheet. **Varia Textile** showed a range of French manufactured curtains, gauze and canvasses. **Peter Evans Studios** showed their approach to supplying specialist Props. and **Radcliffe Transport** were ready to discuss moving your scenery to any part of the world. Moscow is expected to see their familiar painted vans late next month.

Agents and stockists again took stands to



ADB's impressive S28 control seen on the White Light stand.

show their range of products and to meet new customers. **Trafalgar Lighting** in London offer lighting rental and sell reconditioned second hand equipment at low cost. **Raxcrest Electrical** again London based are agents for **CCT** and do lighting installations. **Ancient Lights** from Norfolk has earned a special reputation for their stock of historic lighting equipment available as period stage and TV practicals and they also offer sales and rental for modern equipment and a spare parts service to keep your not-so-old lanterns in working order. Highlights of their stand were a working colour dipped batten and a weird early disco effect salvaged from a 1930's ballroom. **Playlight** from Manchester, and now with a London base, offer lighting, drapes and now pyrotechnics. **SML Audio Visual** provide audio and lighting services in the Southend area. **Canford Audio** from Tyne and Wear specialise in audio products and components. **AJS London Theatre Centre** serve the south east and as well as being **CCT** and **Pulsar** agents had brought **Phoebus** and **Ultra-Arc** follow spots to the show. **Lancelyn Lighting** from Oxford provide scenery kits for schools and amateurs and other scenic effects and, of course, lighting hire for their area. **Grapevine Sound and Light** from Lymington offer general equipment hire and are agents for **Mercury** lighting stands. **Music Lab** from north London offers high quality loudspeakers and driver systems. **A.S. Green** from Mersyside supply scenery and platform systems and are agents for Hall Stage and Strand. **Northern Light** are lighting specialists based in Scotland.

Just a few stands offered know-how without supporting hardware. **Book Bazaar** specialise in second hand and out of print technical books. **Graham Walne** is well known as a consultant and author on theatre technology. **John Offord** publishes theatre books and magazines and runs a rival to the

ABTT Trade Show. **Renton, Howard, Wood, Levine** are leading theatre Architects and took space to show some of their designs, drawings and models for their current work. Finally the ABTT training team, under a new banner as **Technical Training** showed work from current courses and information about the future.

Over-all, a busy, friendly event with most exhibitors, new and old, pleased with attendance and interest. Product of the year mentioned above, was **Lite Beam Truss** from **Slick Systems**. Technician of the year was awarded to **Mike Barnett**, master designer and consulting engineer for hydraulic scenery and effects. Stand of the year went to **Avolites** for an elegant arrangement of flats, lights and rostra giving plenty of space for their control and dimmer packages. Next year again at Riverside? Too early to say, though complaints of lack of space, difficult parking, industrial environment and clash with other events will not be easy to solve without introducing other problems. Best, I think, to thank the ABTT for doing a good job for an industry which has never had spare cash for backstage gloss and glamour.

Conference — Presentation 2010

The ABTT began 25 years ago and immediately held an International conference at the old National Film Theatre on the South Bank. **Presentation 2010** was organised to look back over the achievements of these 25 years and to look forward to the next quarter century. Chairman for the event was **Richard Pilbrow** who played a leading role in founding the ABTT and in many of the theatrical landmarks since. His opening keynote speech traced the events leading to the realisation of the need for the association and, guided by reports in **Tabs** and **Sightline**, reminded delegates of some

of the interesting and significant events that ensued in the world of technical theatre. **Ralph Koltai** followed with views on the progress of theatre design and surprised many in the audience by finding styles and techniques from the early 1930s rediscovered and repeated in the 60s, 70s and 80s. His thesis seemed to be that progress, if not circular, is a fairly tight spiral. **David Hersey** followed with thoughts on the inevitability of the explosive growth in the complexity of lighting rigs since the advent of the recognised Lighting Designer role and, by and large, pronounced himself satisfied with the equipment at his disposal.

The second day began with **Peter Kemp** talking about his involvement designing and manufacturing the stage machinery and mechanised scenery now dominating many West End productions. His view that safety could not be left to the sceneographer met with sympathetic agreement. To remind theatre delegates that presentation is not now constrained to live performance a team from **Sony Communications** showed the latest wonders of solid state video cameras, large screen TV and computer graphics used to indoctrinate salesmen at product launches and at big business trade shows. **Peter Mapp** followed with a progress report on auditorium acoustics, both natural and assisted, and revealed the care and expense that is often needed to optimise hearing conditions. **Nigel Jarvis** followed with his views on safety, stressing the wide range of legislation and the responsibility that falls on the shoulders of a theatre manager. Regretting the passing of the GLC he suggested that if theatre and other venue professionals take pride in their position, the time may be ripe for new safety standards to be set from within the industry. The final presentation was by **Nicholas Thompson** who reviewed recent theatre buildings, concert halls and public spaces and drew attention to the need to integrate entertainment spaces into the whole city centre environment. His colour slides of new buildings built to new standards of versatility and adaptability showed what can be done when the money can be found.

Concluding the conference **Richard Pilbrow** remarked that few speakers had made any attempt to risk their reputations on predictions for the future. Indeed, on this subject **Ralph Koltai** had probably said everything when saying that if he knew what would be possible 25 years from now he would set about trying to achieve it tomorrow. Generally the conference was thought to have been a success though ABTT officials were chided for a too narrow interpretation of 'theatre' in choice of activity and membership. Replying, ABTT Chairman **Richard York** agreed that change is desirable and announced that plans are under discussion, though everything depends on raising more money than has been obtainable from theatre funding bodies in the past.

Both chairmen and the audience thanked the speakers and the sponsors. A fuller report of the conference will be given in the ABTT Jubilee issue of **Sightline**.

PARIS PROMENADE 1900

Theatric Tourist FRANCIS REID at the Musée Grévin

The new Musée Grévin sets out to recreate the flavour of Paris at the turn of the century. The museum's theatricality includes both its style and its content. It is based on a series of tableaux settings peopled by wax figures. Light and sound are used to create atmosphere and to impart movement by shifting the focus of attention to selected parts of the scene in sequence. And it is inevitable that a selection of twenty scenes from the closing years of the nineteenth century in Paris will include moments that are not merely theatrical but are about theatre.

Musée Grévin is housed in the Forum des Halles, the multi-layered complex of shopping promenades that has arisen from within the hole left expectant but desolate for a surprisingly long time after the Les Halles food markets were moved out to the suburbs. The museum is open daily, seven days a week, with visitors being processed through the display by a series of opening and closing doors synchronised with the sound/light cycles for each tableaux. The processing is, naturally, computerised and the programme cannot allow for a lingering glance at the last lighting cue — I was nearly assaulted by one of the doors. However the system works rather well and if it lacks the slickness of Disney's Epcot journey's it compensates with a rather toy theatric naivety that engenders a lot of charm — and imparts a lot of humanity to many of the figures despite the pallid translucency of faces whose wax carries an inescapable aura of the embalmer's art.

The journey starts in 1885. We meet **Victor HUGO** in front of Notre Dame, accompanied by two famous characters from his novel of the same name: the gypsy Esmerelda and Quasimodo who can be seen astride the cathedral's famous bell. Next the poet **Paul VERLAINE** writes at a table in the Café Procope in the rue de l'Ancienne Comédie, in front of him a glass of absinthe. Dusk falls on the city, the lamp-lighter passes by and a beggar plays an old Parisian melody on a barrel-organ. By 1886 **Louis PASTEUR** has made his first major vaccine discovery but his laboratory still provides poor working conditions for his

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continuously successful fight against disease.

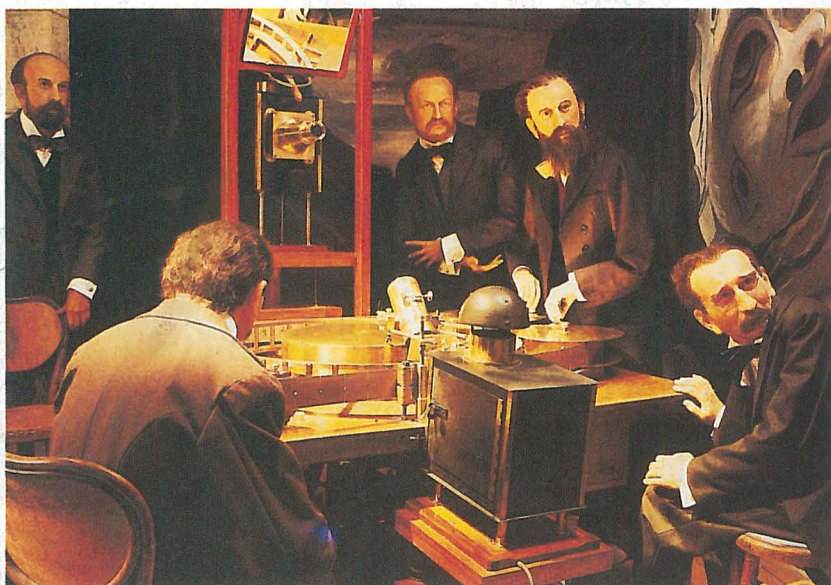
In his workshops **Gustave EIFFEL** and his partner **Maurice Koechlin** meet **Arthur Meyer**, director of Gaulois and founder of the original Musée Grévin. Eiffel explains how his tower, the centrepiece of the 1889 World Fair, was conceived and constructed in 17 months. Eiffel is pioneering the new science of aerodynamics and he describes the experimental works in iron erected in many parts of the world including the Garabit Viaduct in France. Meanwhile, moving from science to science fiction, we find the imagination of **Jules VERNE** captivating **Mme Dieulafoy** (said to be the only woman of the time who could wear men's clothing without causing a scandal) and **Savorgnan de Brazza** (a pioneer of the Congo).

At the **OPERA DE PARIS** in the Palais Garnier it is 1895 the opening night of Massenet's 'Le Cid', an overwhelming success. To the sound of the opera's finale and tumultuous applause, the composer meets his contemporaries on the steps of the theatre: they include **Delibes**, **Guonod**, **Saint-Saëns** and **Debussy**. With the composers are the divas **Patti** and **Melba**. The Café Napolitain on the **GRANDS BOULEVARDS** was a nightly meeting point for French intellectuals in 1890. Against a background of newspaper sellers and billboard carriers, and the omnibuses from the Madeleine to the Bastille (the city's first public transport), writers such as **Emile Zola**, **Anatole France**, **Guy de Maupassant** and **Alphonse Daudet** debate with the great master of stage farces **Georges Feydau**.

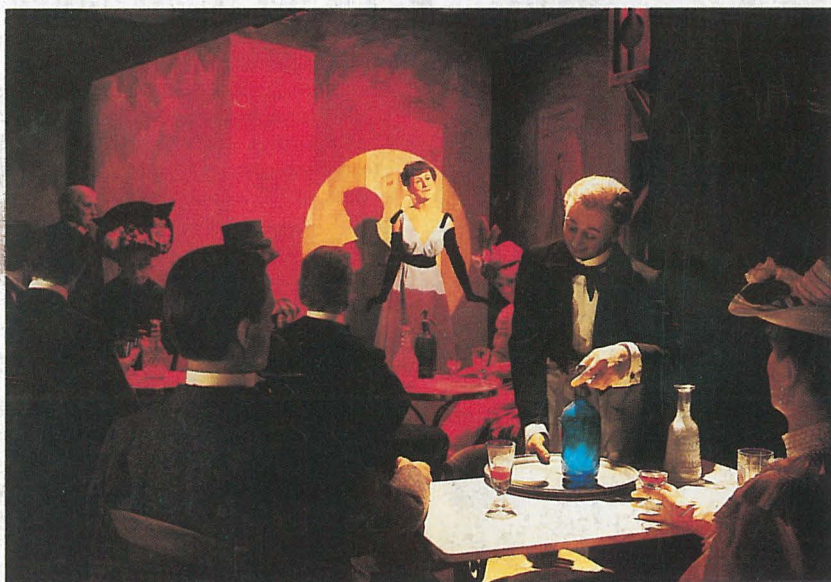
At the **THEATRE OPTIQUE**, a splendid early (1892) example of moving projections (brass and mahogany engineering at its most poetic), is demonstrated by its inventor **Emile Reynaud** to the brothers **Lumière**. The system is called 'Pantomimes Lumineuses' and its 'Pauvre Pierrot' can claim to be the world's first movie cartoon. But by 1895 the Lumières had overtaken Reynaud with their cinematography.

The **BUTTE MONTMARTÉ** on a winter's morning. (The snow needs a perforated stopping mask to tighten the focus of its falling golf balls.) While the bells call to mass, **Degas** sketches a snow fight while composer **Gustave Charpentier** sees a young couple who inspire his principal characters for his lyric drama 'Louise'. In the **CABARETS OF MONTMARTÉ** at Le Chat Noir, **Aristide Bruand** (in his usual style on top of a table) sings 'Nini Peau de Chien', dressed in black apart from the red scarf as worn by supporters of the peasants revolt. Then **Yvette Guilbert** sings 'Madame Arthur'. At the **MOULIN ROUGE**, to the sound of **Offenbach** and the can-can, **Toulouse-Lautrec** draws, surrounded by the artistes to whom he brought everlasting fame through his posters — **Jeanne Avril**, **Valentin le Désossé** and **La Goulue**.

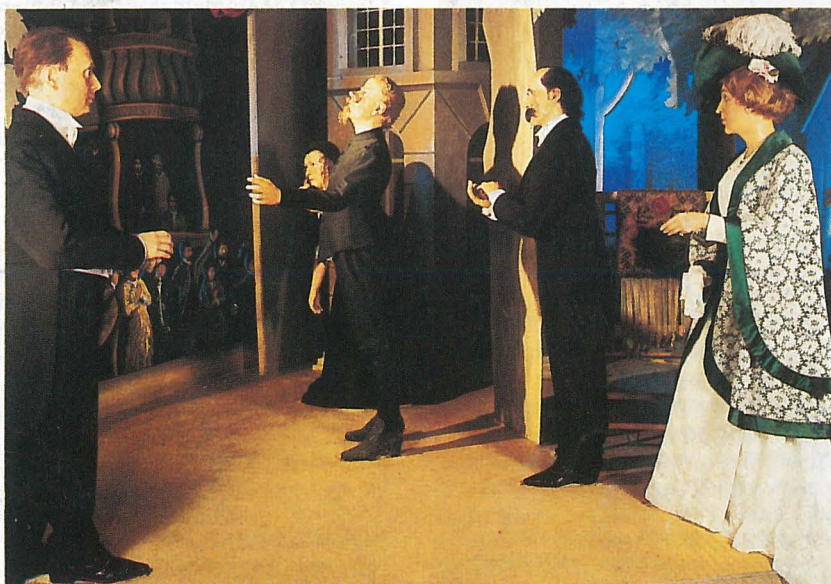
It is the **IMPRESSIONIST'S ERA** and



Émile Reynaud demonstrates his Théâtre Optique to the Lumiere brothers in the presence of the then president of the Musée Grévin.



Yvette Guilbert singing at Le Chat Noir in Montmartre.



The first performance of Rostand's play Cyrano de Bergerac.

in Gauguin's studio young impressionists Manet, Renoir and Cézanne show their work to the sculptor Rodin.

In **LES HALLES**, close to Saint Eustache, the actors Tristan Bernard and Cecile Sorel meander through the 'stomach of Paris' while the market porters hurry about their business. At the end of the afternoon the crowds stroll along the **CHAMPS-ELYSEES**. While children ride on the merry-go-round or watch a punch and judy show, the great actress Réjane steps down from her carriage to be greeted by the actor Lucien Guitry (father of Sacha), the poet Jean Richepin and the actor Aimee Tessandier. In the **BOIS DE BOULOGNE**, frequented by horseriders, a soldier woos a nanny while a young lady has a bicycle lesson.

Sarah BERNHARDT as Cleopatra fanned by a pair of nubian slaves plays in one theatre while in another the curtain falls to thunderous applause on the last act of Rostand's **Cyrano de BERGERAC**. In the wings we join the authors wife and the theatre director waiting to congratulate the actor Coquelin on his playing of Cyrano.

This was the period when **FASHION** came into its own and haute couture became a major preoccupation with the bourgeoisie. The great designer Charles-Frederic Worth makes a gift of a completely new wardrobe to the Countess Greffulhe while the young poet Paul Poiret, later to become the great leader of fashion trends at the beginning of our century, looks on.

On 14th April 1900, on the quay of the Seine with the bateaux-mouches gliding by, Emile Loubet President of the Republic inaugurates the **WORLD FAIR** to mark the beginning of a new century. Distinguished visitors include the Maharajah of Jaipur and the Prince of Wales. And finally we visit the World Fair in the evening — electricity is the fairy story come true. By the illuminated fountains, with the great ferris wheel in the background, the scientists conversing include Edison, Curie, Renault and Blériot. As Victor Hugo foresaw, Paris has become the City of Light spreading rays of creative richness.

Great fun. I enjoyed its charming naivety. Some of the movement is good, usually when it is apt as in the falling curtain at Cyrano. At other times, such as the slaves waving fans to upstage Bernhardt's Cleopatra, there is an inducement to giggle. Wax and scene paint are not intended for close viewing but, while distance might lend enchantment, it would lose the sense of being there that occurs at the better audio-visual moments in the journey.

PS: Nearby in the Forum des Halles complex is the **MUSEE DE L'HOLOGRAPHIE** with a fascinating collection of holograms (viewed both by transmission and reflection), an explanatory display of their production and, in case you want to own your own, a *Holo-Boutique*.