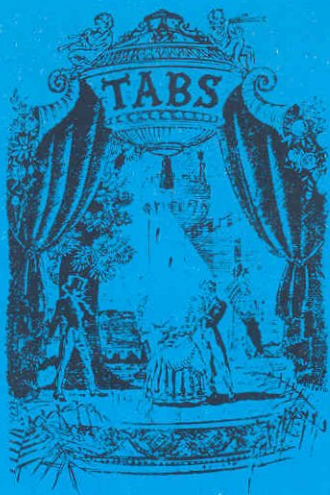


# Tabbs

Stage Lighting International

Spring 1977

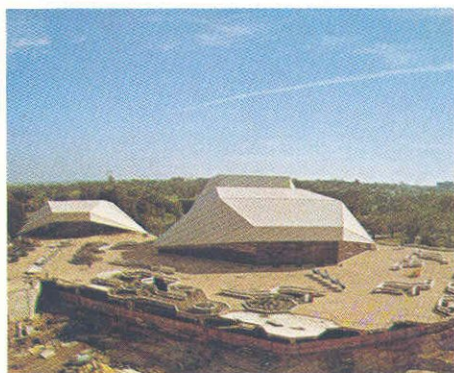




# TABS

Spring 1977 Volume 35 No. 1

Published by Rank Strand Electric, 32 King Street, Covent Garden, London WC2E 8JD



The cover reproduces a cartoon by Bruce Petty for the 1976 Adelaide Festival of the Arts and is reproduced by courtesy of the organisers. This design made a striking poster for Australia's leading International Arts Festival which was founded in 1960 and has been held every two years since then. Many of the Festival's major events are now housed in the recently completed Adelaide Festival Centre (pictured above) where the performance spaces are not only architecturally impressive but technologically practical. The 2,000 seat Festival Theatre, and the 600 seat Playhouse, together with Studio Theatre and outdoor amphitheatre, house round-the-year performances on a scale which must arouse envy around the world in cities of much larger population.

Editor: Francis Reid

Editorial	2
At the Court of King Cotton by Michael Williams	3
Light—Space—Architecture by E M Feher	7
An audience will accept almost anything except boredom by Robin Close	9
African Abstract, SAITT International Symposium	12
For the first time on any stage by Philip Rose	14
Multi-Q	16
Wembley Conference Centre by Brian Benn	18
To Look Forward First Look Back by Bob Anderson	21
Books	22
Tabman's Australian Diary	22

## Alive and Well and Living Down Under

Those who read magazines backwards—and many TABS readers have been observed so to do—will have discovered that *Tabulus* (or should it be *Pomulus*) has been down under. Does a three week visit to any country, let alone such a vast country, justify the making of generalisations? No! But will that stop such generalising? No!

Theatre in Australia is alive and well. Very alive. Very well. Much healthier than many Australian theatre people appear to believe. Perhaps geographical isolation inhibits development of confidence. Broadway grass seems greener and Shaftesbury is the avenue to valhalla.

Not that there is any harm in self-criticism. Evolution in the Arts is dependent upon nagging introspection: get the questions right and there is some possibility of digging out the constructive answers that spell progress.

Australia, you are asking the right questions but in assessing the answers you sometimes seem to lack the final spurt of confidence to trust your theatrical intuition. Have courage—your intuition is pretty good. In a world full of emerging nations, you are no longer a young country. You already have a considerable mature theatre heritage: keep a critical eye on the rest of the world but *do your own thing*.

... pausing momentarily for an "aside"—is not *do your own thing* a message for every nation everywhere? Simpler communication is resulting in welcome cross-fertilisation. Fine. Provided the process is informal. Formal cross-fertilisation could propagate the deadening hand of international standardisation whereas vital theatre usually stems from intuitive departures from the orthodox

... but back to the plot.

Theatre Buildings are the catalyst in the Audience ⇌ Actor communication and the new Australian theatres are Beaut. All the world knows Sydney Opera House: indeed it is probably no exaggeration to say that Sydney is now the most well-known opera house in the world. It is an architectural

marvel and an audience delight. But—and there is no point in avoiding the naked truth—the backstage technology of the drama and opera theatres demonstrates miscalculation and misconception on a scale that can only be called grandly operatic. That fine performances are presented is a tribute to the excellence of the Sydney scenographers and technicians. They cope brilliantly, but—one wonders and dare not ask—at what cost in human frustration, to say nothing of dollars.

But there are other new theatres in Sydney. The *Royal* and *Her Majesty's* may not have been labelled as international architectural landmarks but they are comfortable, workable, and cost-effective; the *Seymour Centre* could be recommended as a reference point for anyone contemplating a Thrust (and take a look at the *Nimrod* on the way).\*

And if the Good Fairy were to ask "Tabulus, which of the world's twentieth century opera houses would you like to have at the bottom of your garden?", the reply would certainly be "Adelaide, please!". And that goes for both watching and working. Ask the same question in two or three years however and the answer might possibly have changed to Melbourne because there is every indication that the Victorian Arts Centre building team have got the recipe brilliantly right.

But theatres are nothing without actors, and actors are nothing without scenographers. (*an aside*—even if the performance is of the "plank and passion" school, the plank has to be designed, constructed and lit.) And the whole thing is nothing, but absolutely nothing, without an involved audience. In all this the situation is definitely looking good.

Australia, is the message clear? You no longer need to look elsewhere. The time has come for elsewhere to look to you.

\* Her Majesty's Theatre was featured in TABS for Spring 1975 and our next issue will illustrate the Theatre Royal and the Seymour Centre.

# At The Court of King Cotton

MICHAEL WILLIAMS

*The author is Associate Artistic Director of the Royal Exchange Theatre Company and was Project Manager for the design and construction of the new theatre*

The first performance at the Royal Exchange by the 69 Theatre Company in 1973 was inside a temporary tent theatre costing £8,000 to build, and designed by Laurie Dennett. The tent was a 450 seat temporary scaffolding structure initially put up for only three weeks. Its success was so great that it remained for nine months playing to capacity houses until the insurance companies refused insurance.

This was half way through the design process for the theatre that is now built there, it has cost a million pounds, and was opened by Lord Olivier on 15th September 1976. The 69 Theatre Company is now the Royal Exchange Theatre Company and started life at the 200 seat University Theatre in Manchester. This episode in its history, which goes back even further to the 59 Theatre Company and the Old Vic, is important in that it was from these back streets that the 69 Theatre Company was able to persuade the Arts Council, the local authorities and the public to support and finance a theatre which it wished to build within the then disused Royal Cotton Exchange.

This building, which is situated right in the city centre, was originally the nub of the cotton trade of England and possibly the world. The main floor area of the hall within which the theatre is situated (and which is only half the original size) still comprises  $1\frac{1}{2}$  acres of parquet flooring, three glass domes up to 37 m high, and relatively crude mock Victorian decorations. This unlikely choice of a site for a new major regional theatre was suggested by a great friend and supporter, P.Q. Henriques. As the story goes, the inspiration came to him while he was lying in his bath following the rejection by Manchester City of our proposal to build an impressive multi-million pound theatre on a virgin site.

Richard Negri, then head of Wimbledon School of Theatre Design and now one of the Artistic Directors of the Company, was asked to conceive a way in which this space could be used. From his work at Wimbledon and the University Theatre, his long association with the Company and because the new theatre was to be a "temporary" building (only a 25 year lease) he was able to lead us into a situation of designing a theatre to perform in *now* without too great a concern for our grandchildren.

I hope this partly explains why the theatre contains many intentional limitations in the conventional sense and why we chose architects and engineers who had not worked on a public building before. (At one stage we were in discussion with engineers who designed cranes and the landing gear for lunar modules.)

The theatre comprises a theatre module suspended within the Cotton Hall, a magnificent foyer totally surrounding it, and

full front of house and production facilities which have been moulded into adjoining existing areas (the workshops have replaced and take no more space than the original loo's—only gents at that time!).

## THE THEATRE MODULE

The term module grew affectionately during the long design process because it is the heart of the project and its distilled nature contrasts with the rest of the building. It is theatre in the round based on a seven-sided figure and seating up to 740 people. There are six rows of seats on the ground floor and two rows each on two balconies, no seat being further than 9 m from the stage.

The original intention was to support the balconies from the floor; however there are shops and arcades beneath and it was found that the structure of the main building would

Regulations lay down that the structure of a "building" must be clad in, or constructed from, fire resistant material, and also demands that the public must be able to exit *directly* to the open air in case of fire. There was a conflict in the mind of the City Building Surveyor as to whether the theatre module or the existing Royal Exchange was the "building". He eventually decided it was the theatre module. As we were neither able to protect the structure due to weight considerations, nor able to provide a direct means of escape for the audience, we applied to the Department of the Environment in London for a relaxation of these regulations. This was agreed on condition that the hall around the theatre became a fire-safe area. All fixtures and fittings in this space had to be made from inherently non-flammable material, the adjoining spaces had to be separated by fire resistant walls and

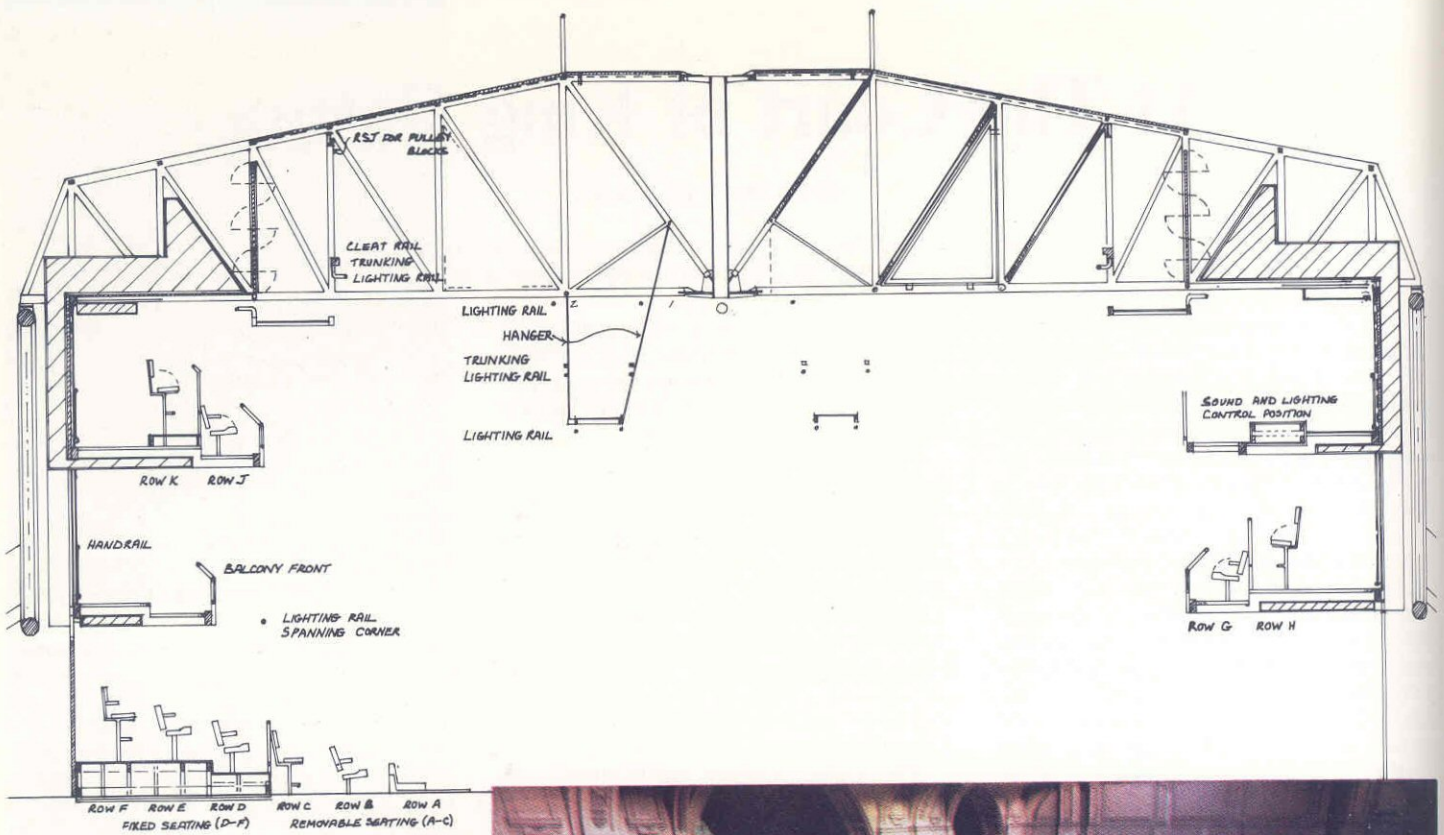


not take the extra load in this way. Consequently there is now an elaborate outer structure to the theatre which is taken back to the four main columns in the hall via four small polished steel bearings. This in turn supports a roof structure, a little like a bicycle wheel principle from which the balconies are hung on only 25 mm thick rods. As a bonus there is now very little interference with sightlines by the structure.

It is perhaps appropriate to mention fire regulations and precautions at this point.

protected by both heat and smoke detectors. At one stage we found this situation financially crippling, but it now means that there are very few conditions placed on materials that we can use on stage. Even though we do not have an iron curtain this freedom is unusual to open stage theatres in this country.

The module is enclosed in clear glass, there is therefore a close relationship between the inside and the large outer area, and it is possible to affect the atmosphere



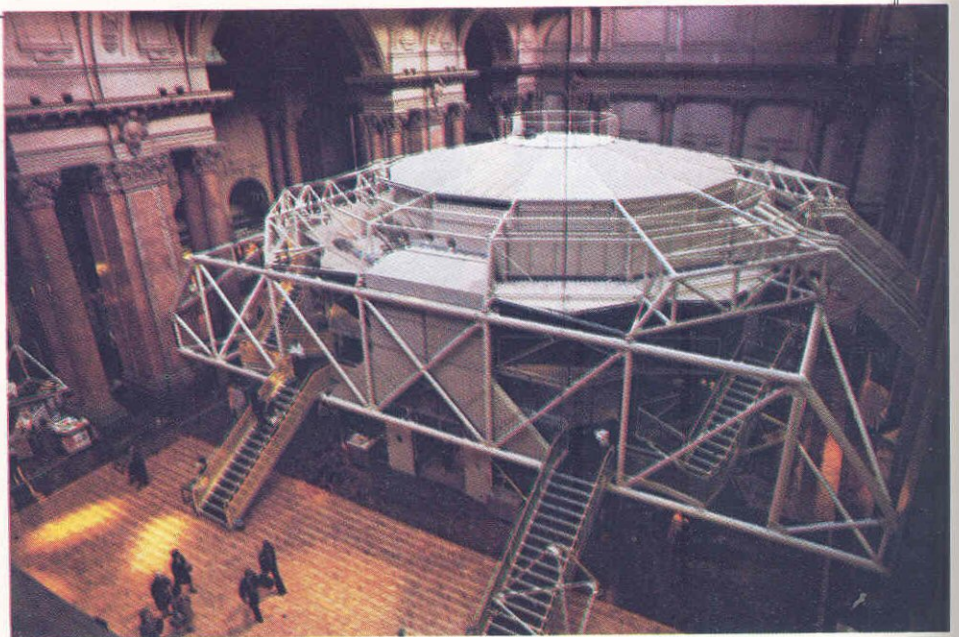
inside by lighting in the surrounding space. Black-outs are not possible; it is a definite move away from the black box, incarcerated feeling engendered in many modern auditoria.

I ought to mention that the domes were re-glazed and we took the opportunity of replacing the clear glass with that of a blue-red colour (Cinemoid reference 36 + 42 + 54) which means that the light level inside the theatre is more like dusk in feeling than daylight.

This link with the main hall is further strengthened by the provision of openable louvres at the top of the theatre and by speaker outlets in this large surrounding space. The 7-8 seconds reverberation time of the sound in the hall can be used to dramatic effect in comparison to the more conventional acoustics (around one second reverberation time) inside. Although the glazing contractors are still working on improving the sealing of the glass skin, the actors' intelligibility is very good even at low volume and when facing the opposite way. I believe this is primarily a result of our insistence on keeping the total volume of the stage and auditorium to the minimum. Advice to have a large fly tower was resisted (which could have doubled the volume) and full scale mock-ups were carried out to arrange the seating, allowing the best sight lines with the minimum overall size of the building. The arrangement of one row at the top was altered to comply with regulations, and we are now in the process of modifying this as the sight lines were not good.

#### THE STAGE AND STAGE MECHANICS

The stage is at the same floor level as the surrounding hall and with all the seats in place is approximately 8.2 m in diameter. There are no traps in the stage



floor—unfortunately the Danish Food Centre and Boots Chemists are immediately beneath. Sight lines do allow platform stages to be used, but it was thought to be more practicable and powerful for its basic stage to be at the same level as the main hall.

The first three rows of seats are totally flexible and any number can be removed or re-arranged in a matter of minutes. One-seventh of the whole ground floor can be taken out to give a more thrust-like stage form for scenic backing, music accompaniment, additional entrance etc. Thank goodness this is the only mechanical object, it took five hours to remove at the last count!! In addition the fronts and seats can be removed from the two balconies allowing stairs and platforms to be directly supported from the main structure.

Actors enter to the stage from the main hall through seven doors in the skin of the module (these are also common with the audience and are the routes for changing settings and props). There is no separate "wings" or "scene dock". Actors and stage management wait and work in the public space around the module.

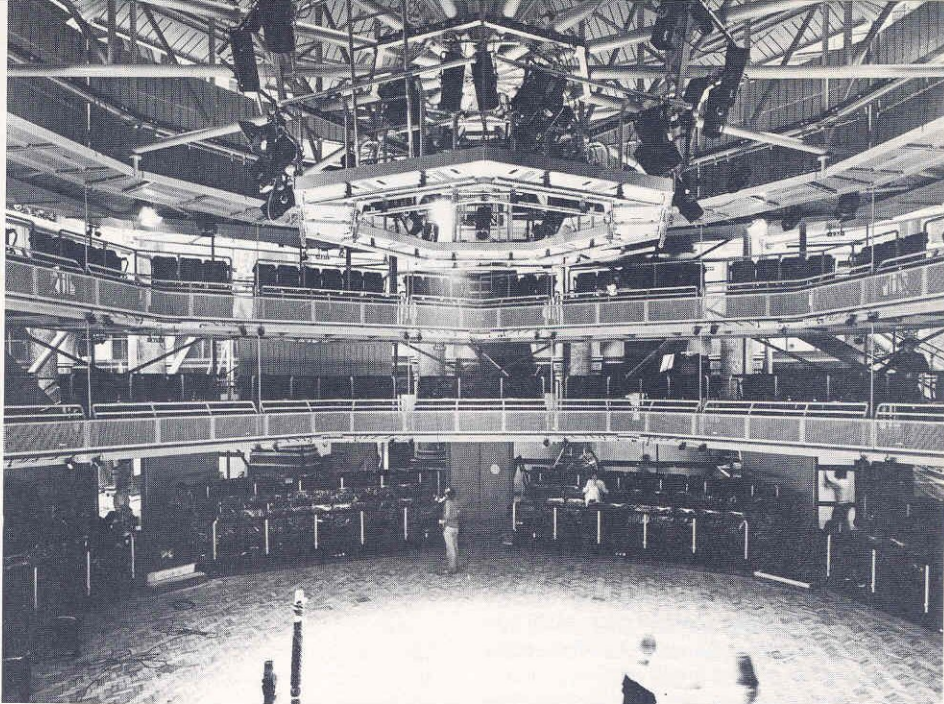
As I mentioned, there is no fly tower; it is conceived that objects are not flown as such but spotlined in position, with the ability to move up and down within the space available. The clear height is only 7.3 m with a further 2.5 m between the roof trusses so that hanging objects are always visible. Because everything else from lanterns to rigging bars is also in sight, it does not lessen the dramatic impact or surprise at an object dropping in or flying out. There are three counterweights that run on the outside of the module and they can be spotlined to any position within. Various hand winches and hemp lines complete this motley but flexible flying system.

## STAGE LIGHTING

As the audience is on seven sides and the whole area is so small, increased emphasis is placed on the actors, what they wear, what they act with and how they are lit. In these conditions it is hard to cover up artificiality and insincerity.

It was known that lighting was going to be very important. A lot of discussion was spent on positions, lanterns, circuitry and control of the lighting process. I have now lit one simple production and even with the background knowledge of the design concept, I found myself quite unprepared. The rig is totally visible, distances are small therefore critical, the audience is onto the edge of the stage all round, and there is the necessity to achieve a balance between directional feeling and lighting the actors well for a comedy. A lot of equipment is necessary.

Very early on a special link between the Company and Rank Strand was formed which has resulted in a system closely moulded to our needs. At the heart of the system is a 120-way M.M.S. with  $100 \times 2\frac{1}{2}$  K and  $20 \times 5$  K dimmer circuits. The desk is split in two to fit into a very small control space which is completely open to the stage and the audience (shared with the Stage Manager and the Sound



Operator—on the second gallery). One part of this desk containing all the controls needed for performance is able to be carried easily to the ground floor for lighting sessions. This enables many of the operations and fades to be fully worked out during the lighting sessions, and a real contact can be established between the lighting designer and the operator which is independent of telephonic or other mechanical aids. A tape store has been incorporated into the fixed part of the desk as the Company plays in repertoire, TV companies use the theatre regularly and many lunchtime and late night shows are performed.

The lighting positions can be seen clearer from the section and all of them can be reached from galleries, apart from the two bars under the central "basket". This "basket" has the important effect of decreasing the void above the stage and also means that owing to the short throw and prominent position, the lanterns themselves have a dramatic impact.

The number and positioning of the outputs was underestimated for the operation that is now expected of the system. There are no large voids or roof spaces to run temporary cables—everything is seen and most rigs will be different for each production. It is now clear that we should have found a way of affording a large patch panel to avoid large numbers of circuits being inaccessible at any one time. We are alleviating this by opening up the trunking at points and paralleling out particular circuits.

I have just said that most lighting rigs will be different. We are now into our fourth production. None of the lighting layouts so far have borne any resemblance to each other. It does seem clear that this is one way of enabling the resultant lighting to be particular and appropriate.

The lanterns by and large are a combination of T-spots, 743s and 243s. T54s and the wider T64s in more or less equal numbers were installed, but on the first production we had to convert many of the T64s to the even wider version. The quality and output of the light is excellent, although I still miss the toothed shutters as on our old

264s. The other lanterns were chosen from various manufacturers for the nature and quality of their various light outputs. There seems no substitute for a low voltage beam light and the 2 kW C.C.T. Profiles (without fan) are incredibly light and flexible.

The use of the building by television companies was considered at an early stage. Of course the stage and outer hall at one level makes their movement problems minimal. On the electric side their outside broadcast units and lighting can be serviced from within the building, due to the  $2\frac{1}{2}$  K and 5 K circuits and the provision of an additional 100 A three-phase outlet.

## SOUND

Ian Gibson designed and indeed built large sections of the sound system. From his work with the Company at the University Theatre and in the temporary tent, he first created his own brief and then worked within a very tight budget. Like the lighting, the audience in the round and the special nature of the surroundings has offered him enormous scope. The sound can come from on stage, above stage, in the audience, around the audience area, in the main hall space or from any combination. In operation the sound can be rapidly switched or faded between any of the 44 speaker outlets in these spaces.

The basic components of the system are 3 T.R.D. tape recorders (manual to cut down the operational noise), an 8-way mixer totally designed and built by himself,  $4 \times$  stereo Crown D.C. 300 W amplifiers,  $14 \times 100$  W small speakers and  $2 \times 200$  W big beasts. The smaller speakers can be rigged anywhere and are provided with standard hook clamps whilst the larger units are on wheels.

There are permanently wired in 36 mic. lines for use with an external mixer for musicals, and although the interference pick up from the dimmer circuits is acceptable for our own use, the BBC have had great difficulties with thyristor hum whilst recording regular lunch time concerts. The building after all is an enormous metal grid and the only way they have found is to use the double screened Quad 5 star cable for all mic. runs.

## STAGE MANAGEMENT AND COMMUNICATIONS

The crucial decision *not* to enclose the stage management control was made early on and indeed confirmed after the temporary tent. Instead, in common with the lighting and sound control, the Stage Manager works in the open from the second balcony. The total space for all three operators including equipment is only 5.8 m<sup>2</sup>. Not only is proper contact ensured with the stage and performance, but also between the individual operators. No cue lights are needed between them and at most only a nudge is necessary. However, being 4.9 m above the stage creates a certain sense of isolation from the rest of the stage management. This places a very definite reliance on the communication systems installed, but more important, responsibility is placed on the other members of the stage management team to be aware of the performance at all times, and to be able to act almost intuitively.

The main parts of the system are as follows:

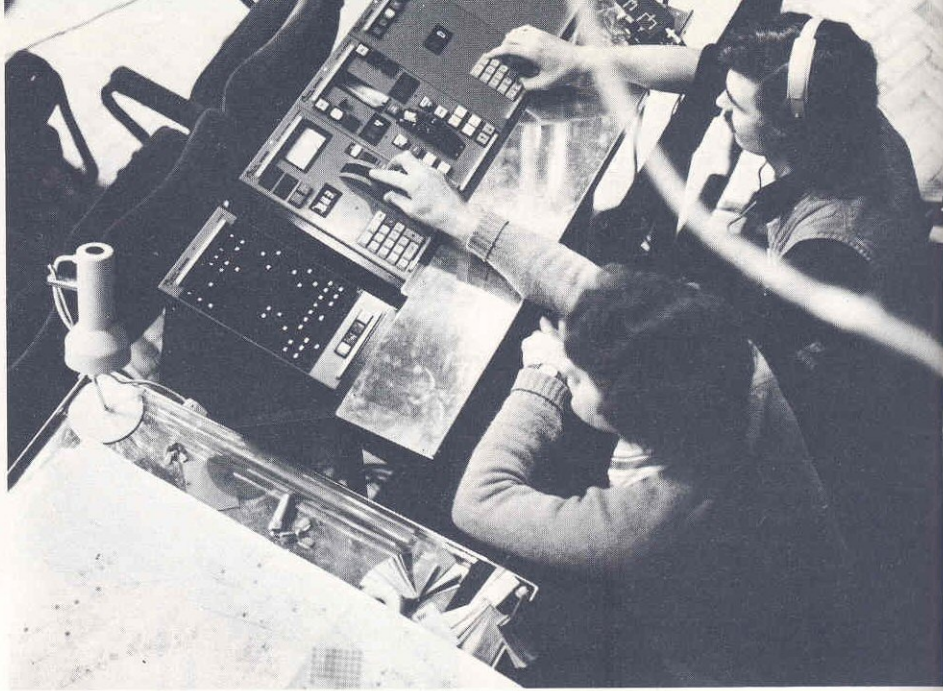
Show relay and paging to all Dressing Rooms, Green Room and most technical areas.

Technical and Stage Management ring intercoms, these are two-way receivers which can be plugged into points inside the module and around the hall. This system is mainly used during technical rehearsals and for one-off performances.

Direct telephone links to key points of the building. These are fixed and are therefore always there in an emergency.

Stage Management paging loop which was intended to enable the stage management operator to maintain links with the floor Stage Manager at all times. It has yet to work, and I am sure that the stage management have developed some sort of sixth sense.

Cue lights—these are not generally needed as the skin of the theatre is transparent, and they are mainly used for noises off and long entrances.



*MMS lighting control removed to ground floor level for rehearsal*

Two pairs of two-way radios which are used on one-off performances (particularly involving the hall) and for use by lighting and sound designers.

I have dwelt on the theatre module because it is the nucleus of the Royal Exchange Theatre Company and the only one of its kind. Its design has obviously had ramifications on the rest of the building in which are situated full Production, Administration and Front of House facilities.

Initially the Wardrobe, Workshops, Rehearsal Rooms and Stores were going to be situated in a rather grand outside warehouse. Thankfully, sanity prevailed, the plans for the Royal Exchange were scrutinised, some extra office space in the building was leased and all the facilities were shoe-horned into this building. With everyone being under the same roof, despite certain shortcomings in space allocations there is created a definite sense of purpose,

the public is not forgotten and a much greater company feeling is created.

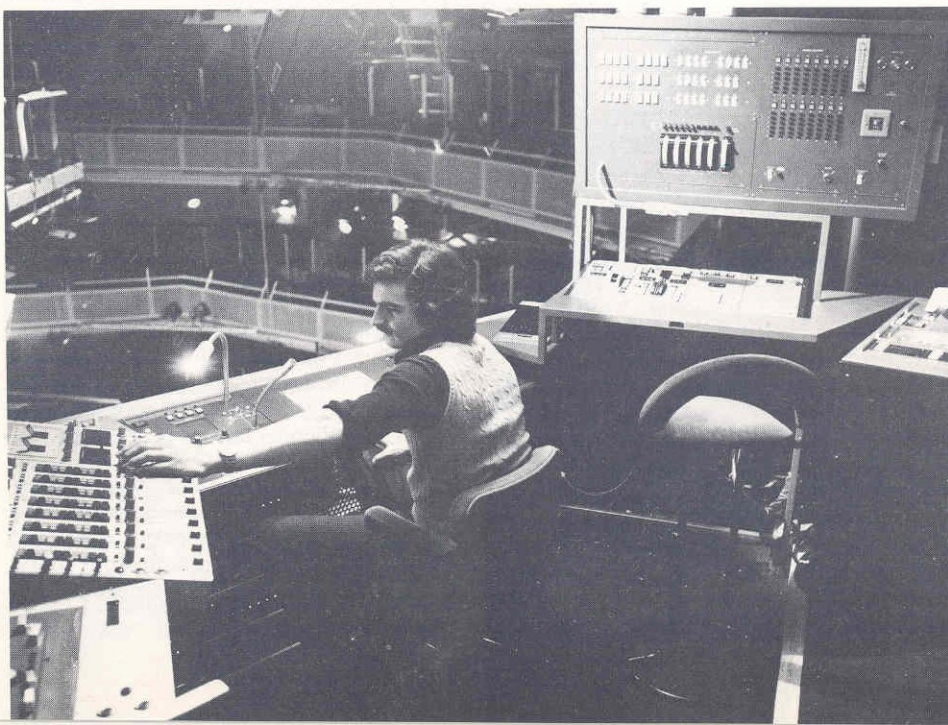
The carpenter's shop, prop shop, painting area is all one linked space—the dividing line between sets and props is narrowed in this form of theatre and is under the control of one head of department. Although the amount of settings and props need be less, the quality and attention to detail has to be extremely high.

The same applies to costumes and wigs which are made in a space which is perhaps, least ideal, rather like a long corridor. Most of the rehearsals take place within the Royal Exchange and as few productions as possible will be rehearsed in London. This maintains a company identity and ensures that the making and fitting of settings and costumes takes place within the same building.

The dressing rooms are in converted Cotton Company offices on the first floor. The Green Room now occupies the old National Westminster Bank premises. The new Front of House toilets have taken the place of telephone booths. The Restaurant was the Reading Room, and the Cafe Bar is below.

In conception we hoped to be creating a theatre which was not overpowering in structure or mechanics, but which enabled proper focus to be placed on the actor and the play. A building that was appropriate to a major regional Repertory Company which needed as few people as possible to run it, thus enabling real responsibility to be placed on most of the staff. Intentionally there is no studio theatre, ensuring that all energies are channelled into the one auditorium. This auditorium is presenting regularly 14 performances a week and this is only possible with flexibility and co-operation from all departments.

*Lighting and sound control position on the second gallery.*



*Theatre conceived by Richard Negri  
Designed by Levitt Bernstein Associates in  
collaboration with Richard Negri  
Main Contractor: J Jarvis & Sons  
Theatre Consultants: Theatre Projects  
Photographs: Brian Linney.*

# Light - Space - Architecture

E. M. FEHER

The necessary division of labour among men has led to the fragmentation of knowledge. The fragmentation of knowledge has in turn produced specialisation formalised by educational methods. Specialisation is not, as can be seen in our time, without consequences. Contemporary architecture has been transformed by lighting and the availability of glass from a **STRUCTURE DOMINATED MODE** of building, into what is almost its opposite. Given the predominance of new building materials, architecture as it has been known is rapidly losing ground. This change places new demands on the architect who in the past was supported by empirical knowledge derived from the wisdom of the ages.

Architectural lighting on the other hand is based on a newer, more accessible form of wisdom. Its principles are based on scientific reasoning and are not accessible by conventional methods.

The problem is an acute one for the architect. How should he evaluate the type and the quantity of lighting which is required in a given situation? How should he organise information about lighting which is available to him in a highly formalised form. The answer is not a simple one! One has to make use of the novel methods if one is to understand their application.

In a more advanced age light and space will again be considered simultaneously as one. Using such a frame of reference space will be defined on two interdependent levels. As a physical enclosure and in terms of illumination. Space as a physical concept is an arrangement of concrete, brick or glass.

## A new definition of the Architects' function

The elements of this physical space, its boundaries function also as **SECONDARY SOURCES** of illumination. Participating in an active manner in the exchange of energy according to known physical laws.

Such an explicit definition of space leads to a new definition of the architect's function, who has to satisfy structural as well as illumination criteria. This definition is not obtained from the conventional concept of "design", where the form criteria dominate. Walter Gropius coined the concept "design as a science". This redefinition of the concept "design" may have been in his mind. Implying that design can be "informed decision making". That in part, it can be based on explicit elements of knowledge.

Bruno Zevi wrote in his book *Architecture as Space*: "...Newspapers devote whole columns to a new book by Koestler or an exhibition of Morandi, but none to the construction of a new building. This is good

criticism well directed. It is purposeful to the point. It was addressed to society several decades ago, it was addressed to society's institutions, which include schools of architecture and newspapers. Newspapers will undervalue common sense and common purpose aspects of human existence as long as society approves. There may be a chance for change somewhere in the wind, but one sees little confidence that is displayed in our schools of architecture. Students of art, and of architecture, represent through their work human experience which can be shared by all. The tendency of students of art and of architecture to react against the environment in which they live, is apparently an expression of the position in society to which they have been assigned by other elements of society, where empirical knowledge and conventional human wisdom is undervalued. This is true for certain highly organised elements of society represented by the sciences, technology and management. Still human knowledge is essentially empirical. There is no absolute wisdom because it has to be re-acquired by every new generation, and passed on to the next generation. That is *all* our knowledge—which ought to be regarded as something of value beyond "definitions".

## The social role of Art and Technology

Less than a generation ago the scene seemed to be quite different. The engineer in England, especially the Lighting Engineer was prepared to consider and to reconsider his position in the workings of society in relation to the architect. The discussions which have been carried on are well documented on this score in the Transactions of the Illuminating Engineering Society of Great Britain. It makes for very instructive reading indeed. These discussions on the social role of art and technology (one could put it thus simply) began earnestly right after the war. It became more intense during the fifties and led to the reform of the programme offered by English schools of architecture during the late fifties and early sixties. There is very scant evidence that anything happened along these lines on the continent. The prime concern was the development of material technology per se. While on the North American continent, the student of architecture led his well sheltered life in the heart of tradition. Dreaming the last dreams of the fading Beaux Arts tradition. Then came the explosive sixties paradox and puzzling to all. Everybody, especially educators seemed to be surprised and even offended. One may ask, can educational patterns which have been

maintained at the School of Architecture at Yale University in the past, be held also responsible for the setting afire of the new faculty building during this time? If there is no direct link to be established, there may be a connection between the problems of society and architecture, through the architecture which has been generated by students educated at Yale. Perhaps mainly due to the fact that the students educated in an unreal and detached environment had lost touch with the real world made by science and engineering and technology. A world from which the architect as well as the artist tends to absent himself habitually in order to react against it.

## As important as good ventilation or acoustics

Derek Phillips, an English architect, said in analysing the situation during the 1950s "...Lighting Engineers employed by the lighting industry have virtually no design (visual) training ... and are limited in their approach." Speaking of the architect, he stated that, "... it seems to me essential for the architect to have a knowledge of the basic principles of lighting, surely this is as important as good ventilation or acoustics in a building.")

David Medd another English architect, reflecting on the fact that architects are the product, of using natural light as the primary illuminant in buildings observed: "I am one of the many architects who have passed a training with virtually no reference to **DAY**—or **ARTIFICIAL LIGHTING**. We never thought of lighting as a positive medium of design."

These statements are in agreement with the fact that in 1956, among 18 schools of architecture in England, only two offered any instruction in lighting. Although artificial methods of illumination had been fully established in modern building practice. Gropius said many years ago: "We have to study man's biological way of life, his way of seeing, his perception of distance in order to grasp what scale will fit him!" This statement contains a lot of truth. For one, in even the most enlightened of ages, there are very few who develop a perfectly balanced mechanism of perception. The rest, as always, will be led by those who are quite certain that they are not blind. The English educational system made note of this fact and produced courses of instruction under the title of "What is man". This topic was to become well known and misunderstood on other continents. Indeed man does not have to ask "What is man"? Or does he! Does he fully or even nearly understand himself and his next fellow? Artists believe they

understand man. Because it seems to be the role of the artist to chronicle man in a formal manner. Does the artist understand man automatically, because he is an artist or an architect?

Considering the new techniques of illumination which have been given to man—does the architect understand the effect of light on his fellow men automatically? It is generally agreed by those who have considered this question that “very little is known about the effects of illumination on living and inanimate forms—but the architect would still proceed with full speed. Within a generation the face of architecture has now been changed. Not by the architect but mainly by the engineer. The structural engineer and the lighting engineer and by management. Still no one thought it necessary to call this new form of architecture, totally unknown in its effects on man’s biological or psychological nature, a form of EXPERIMENTAL ARCHITECTURE! Not even in a formal sense.

A conception of modern architecture as “experimental architecture” can be justified not due to changes in building techniques and building materials alone. But primarily because of the total change to which this architecture has subjected frequently its users. Within a generation architecture has abandoned its traditional notions, its sense of constancy its search for harmony. During the past centuries space had reached its evolutionary peak. It was beginning to expand to a degree necessary by man’s needs: space had become civilised during the age of the Baroque at the latest. Space could be conceived now by architects, even on an individual scale, in such a way that “visual satisfaction” could be obtained from its experience.

And visual satisfaction seems to be an important goal for man whose prime mode of communication with the objective world is by means of his optical sense. Architecture which we call modern, was born partly from need and partly out of protest. As a reaction against the not too distant past. The catalysator being the setting on of the age of INDUSTRIALISATION, which began in Europe at the beginning of the 19th century. Contemporary architecture and architectural thinking has been fundamentally affected by the machine and mechanisation. Surely modern architecture has been guided, at least for a century, by the machine ethic and not by uniquely humanistic considerations. This makes the claim of the Viennese architect, ADOLPH LOOS, hailed as one of the first modern thinkers that “Decoration is crime...” an entirely rational and justifiable statement. Modern architecture and its spokesmen have not been analysed in terms of the validity or invalidity of their points of view. Modern architects have been hailed or they have been rejected. But this cannot be called a rational form of criticism of content.

Architects have produced in this century many definitions concerning their particular “personal” estimation of architecture. But still, one cannot say that the definition of architecture, expressed as a need for shelter has changed in a fundamental way.

Architecture had defined itself in a slow process as it progressed through the

centuries towards the age of the Baroque, when space became civilised. Architecture is uniquely a structure of man’s creation, spiritually and materially. This architecture serves the idea of utility as well as the need for grace. In other words man has said as he evolved through the ages to the builder of houses: “I need a shelter for my physical person. But I need also a shelter for myself as an emotional person. Thus architecture has to satisfy two fundamental needs.

The question of decoration in modern architecture is not a simple one to be answered with a yes or no. Decoration does provide visual interest but beyond that, it serves specific needs. Decoration as colour, as pattern, as variation of contrasting materials serves as point of reference to the human psycho-sensory system for the orientation of this system in an artificial, man made environment. But classical architecture as a creative process and as experience has been put on the defensive by modern Technology. In a technical perspective it is easily forgotten that it is ONLY the architect who represents that particular form of experience and human wisdom which finds its expression in structure, in shelter in buildings needed by man. It seems somewhat less than judicious to place a young technological “expertise” in opposition to the weight and quality of an accumulated sense of wisdom and experience, especially since modern technological experience frequently is but one generation old and untested.

A primary factor during the onset of the Age of Industrialisation was the EXPANDING WORKDAY. This led to the accelerated development of new types of buildings, such as factories and offices and the means of their illumination by artificial techniques. A consequence of this development was the fragmentation of the age old cycle of time, the alternation between the normal day and night periods which had guided man’s activities before the 19th century. Electrical lighting is nowadays taken entirely for granted, and man has adapted all his thinking to the presence of this resource. Still electrical lighting was relatively new even 50 years ago, but has become universally available in our time.

### The age of incandescence

Illumination by means of a heated filament is a very inefficient method of generating light. Because the filament is primarily a generator of heat, visible light can be considered only as the by-product in this process. Still incandescent lighting has a history of nearly 100 years. This type of lamp has only been perfected in our time, through the application of the iodine cycle. It is the lighted bulb which remains for many people the chief characteristic of electrical lighting. But now for a generation a new light source has been available in the form of the gas discharge lamp. Artificial methods of generating light have a well defined physical basis. The desire to discover the laws governing this process and the linking of

light to the visual process was responsible for the new science of illumination in the present century. The science of illumination developed from its initial interest in the manufacture of efficient sources of illumination into a broad area of study incorporating optics, physiology, psychology and technology. This new science was first recognised in Germany in 1921, with the establishing of the well known Lichttechnische Institut at the University of Karlsruhe.

Man has succeeded with the aid of science in this century in transforming the world. The modern city is now a seat of activity around the clock because light is available at will. We tend to view every step forward as “progress”, and there are many benefits which have come from man’s scientific activities, which can be shared by the whole community. Still there is too little known about the effect of such fundamental changes to which man has been subjected in recent years.

### Another definition of Architecture

Man can turn the darkest corner in a building into spots of intense light and brightness. For some this goal appears less than satisfactory. Generating a novel idea to the effect that, since artificial light is available in unlimited quantities, man can now dispense with the use of natural light in buildings. This somewhat startling notion has already been put into practice in a number of countries, including the USA and Great Britain. What about the “social consequences” of this type of building design? This thought does not seem to affect specific plans and projects as has been shown in a number of controversial examples, such as the case of the Public School 21 in New York. An architecture which is essentially a function of technological decision making does not seem to interest sociology very much. But using the capability of including, or excluding such biological resources as natural light from a building is perhaps the most far reaching decision which can be made by the designer and architect. Such a decision is made against the best interest of the user, generally in order to test the responses of the users of such buildings. Surely it is possible to reproduce the quantitative aspects of natural light by artificial methods of generation, but it remains an open question if this ought to be done. In fact technology, including lighting technology, can be used to a greater purpose than in interfering with the normal cyclical functioning of man’s biological system.

There is now considerable information available concerning the existence of a built-in biological time clock, which guides the processes of the human body. Research has established the existence of a two level process in the form of SENSE CONTACT and in second manner a contact between the visual sense and the vegetative nervous system.

It is at the linkage of the two systems of communication that man’s emotional well-



being is linked to the various environmental, that is physical influences which are communicated to the body. It is believed that light has an even more important biological function than is to be associated with vision as it affects the whole body. We all know that man responds to light in a direct manner as do all living things. On this basis it seems certain that man is a fairly fixed entity operating in relationship with fixed environmental influences. He cannot be subjected at will to decisive changes in the environment. Man as all living things, is governed by certain dominant cycles of time and energy. His own responses are entirely varying in intensity as well as in terms of quality. It has been found that the peak of the activity cycle (the energy cycle) is in the morning between 8 a.m. and 10 a.m., after this the physical and the psychological fitness of man begins to drop reaching its negative plateau around 4 p.m. in the afternoon. This cycle has its inverse parallel in the variations of skin resistance to alternating current which varies in an opposite sense to the activity or energy cycle. This cycle makes also demands in terms of more light or less light which is needed for the execution of given tasks. This need must be satisfied as if it were due to an internal programme.

Is the architect sufficiently informed about such matters? Apparently not; he would not otherwise create buildings which are in opposition to the biological entity man. Architecture and engineering are among the prime environmental factors whose potential must be harmonised with the needs and expectations of man. In other words the specialised disciplines must be humanised. How can this be accomplished? Possibly by a process of education which weighs the human element at least as important as the question of aesthetics. The architect should be better informed and not only about architectural systems. Architecture ought to be redefined as a humanistic instrument and not as an end in itself. The definition of architecture as "... shelter with grace" cited earlier seems to be eminently humanistic for any age. It seems to be an eminent desirable goal.

The question of light and lighting in architecture remains an important one, because this tool can be used to an advantage. But one should be conscious about abuses and the tendency of a discipline to propose system-oriented solutions. The question of a "humanised environment" cannot be decided by the architect, nor by the engineer or the planner. Specialised disciplines lack altogether enough knowledge about each other's motives. What is needed is an agreement to co-operate. This can lead to a mutual understanding of one's capabilities and limitations. Certainly this seems to be an interesting time of opportunity for the student of architecture and lighting, who may now move along this path of co-operation towards the resolution of common problems which to all purposes remains another definition of architecture.

# An audience will accept almost anything except boredom

ROBIN CLOSE

A few floodlights, in full view of the audience, a poor quality tape laboriously telling the history of a building while the wind blows rain into the audience's face is not *Son et Lumière*: but it is too many people's experience of it. They leave vowing never to go to another—and who can blame them? If they do it will probably be an hour's agony on a church pew on a cold winter night. But it should not be; and it need not be—provided there is enough money and talent available.

Since Jean Cocteau raised *Son et Lumière* to an "Art" with his production at Versailles it has sprung up round the world like mushrooms on dark nights. But Cocteau, master of the abstract and a man of theatre, could be relied on to be interesting in a new medium. Now *Son et Lumière* is accepted it produces its fair share of toadstools. It is a static medium more suited to the painter and radio producer than many who undertake it. It is also a very expensive medium and in this country too much at the mercy of the weather to be fully exploited by more than a handful of producers. And far too many of those that try hope they can "get away with it" and ignore another Master's dictum, "You can do almost anything with your audience, dear boy, except bore the hell out of them!" *Son et Lumière* can do that very quickly because nothing "happens" except in the audience's imagination.

From the beginning writer and lighting director must be in close contact to ensure that there is not a ten minute sequence which cannot be lit other than with pictures that add nothing to the emotion or thought behind the words. To assume that lighting effects somehow try to replace live actors is to miss the essence of *Son et Lumière's* abstract quality. Lamps are tools used to create atmosphere, effect, to heighten the meaning of the words—all by painting pictures that constantly change. And usually the script is finished before the lighting director gets a glimpse of it. Too often it is written by a "man of letters" rather than of theatre, let alone masters of abstract sound or poetry—what a script Dylan Thomas might have done!

But the Producer has a headache that affects both writer and lighting director that is a fundamental reason for the audience so often being disappointed—cost. Certainly there are rules of thumb for the lighting expert: use colour, shadows, silhouette; no single picture to last unchanged for longer than it takes the audience to notice every feature of the section he is illuminating and appreciate the overall effect. In an hour-long show (and that is about as much as you can expect your audience to take) the operator's hands will never be idle. But every effect the lighting expert can envisage is governed by one simple consideration: how much will it

cost? (And can the Producer afford it?) In *Royal Windsor* a sequence which worked to perfection lasted exactly 54 sec (except the night a lamp shorted and blew a whole complex circuit!). It involved 20 lamps, seven separate and complicated cues—and cost fractionally over 5½p per second for the lamps alone; leaving aside proportion cost allotted to switchboard, operator's time, cables, filters etc. The headache that becomes the lighting man's nightmare is that an hour's performance @ 5½p a second would cost £198—for the lamps alone. But studio costs for making the tape will be in the region of £500 at today's prices if professional quality is required (and when is not it, please?): so for one week lamp hire plus tape adds up to £1,688—and that is without the actors' fees; another £550 if they are to be "names" to draw the public; the script by a writer with any reputation, another £500—so for £2,738 there is a show that nobody will come to see because the £300 (minimum) hasn't been spent on publicity! He is over the £3,000 mark before he has paid for a sound system to play the tape and switchboard, cables, operator for the lights which will cost at least another £100 to have rigged anyway!

Of course, budgets do not quite work like that, but *Son et Lumière* is expensive no matter how you do it—if the audience is to be given what it is paying for: entertainment.

A recent preliminary budget worked out for a church with capacity for only 400 with acceptable sight-lines gives an example. The sponsors, with perhaps a couple of thousand to spend, wanted "A first class show, no expense spared with the best names in the business; and it is to run for the three weeks of our Festival". Keeping everything on tight rein and rounding all figures to the nearest £10 as a working basis:

Artists	550
Lighting hire	1,500
Programme printing	250
Publicity (minimum)	300
Studio costs (tape)	450
Script writer and research	500
Rig, derig lamps	200
Sound system (amp. speakers)	300
Operator (manual)	240
Lighting director	250
Producer fee	750
Misc	250
	<hr/>
	5,540

They said "No thanks" quite politely!

But costing, budgeting, casting, sound and finding the backing—these are the Producer's problems: the lighting specialist has his own, particularly if he is not consulted in the early stages.



Unorthodox but effective: the Cross lit by three ordinary torch bulbs, shines in the darkness once other lights are faded out.

Unlike theatre lighting where actors have to be visible and the lighting must blend unnoticed as a compliment to the action, in *Son et Lumière* lighting alone provides action and movement. Each location presents its own demands on the lighting director's skills, technique and inventiveness. Taking the materials to hand; the building and lamps available; it is up to him to fascinate, interest, amuse or even shock the audience with the pictures he creates. I am not a great believer in hard and fast rules once basic principles have been absorbed, they tend to limit a creative approach—but two are vital:

- (a) always remember *Son et Lumière* is an abstract medium; a medium of illusion. It is not a play with the actors missing but an "art" in its own right;
- (b) never forget that boredom does not have to be worked for: but an audience's interest does.

Trite? Cliche? Obvious?—agreed; but too often ignored or forgotten.

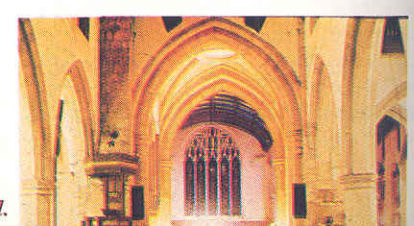
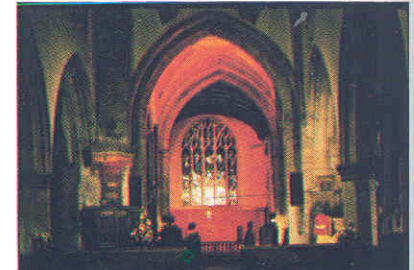
In practice (a) means that where possible the audience should see without knowing how it happens, lamps should never be visible, or the illusion is broken. Last year I went to a production in a small but attractive church. Some 30 lamps, mostly Patt. 137 mixed with Patt. 23, were on view. I assumed there was nowhere to hide them and waited for the performance to begin. The moment it did my wife turned sickly green. As she slowly went bright red I realised what had happened and relaxed: as she turned blue I knew she was not having some obscure form of fit but that the engineer had committed a cardinal crime—he had lit his audience. I prefer my wife her normal healthy colour and had wanted to see the church lit as I would never otherwise be able to. I was disappointed—and as the sound was distorted by being "pushed" too hard through the amplifier and came in part from behind me I gave up; it also lasted too long—an hour on a church pew is enough for my anatomy.

So, a rule: never light the audience. And to prove I do not like rules let me add that I

once did, quite deliberately, with spectacular effect; using ultraviolet lamps every shirt collar and cuff and white dress became fluorescent. It caused gasps of amazement which turned to amusement—as I had intended. It is essential to know not only what you want to achieve but also, more importantly, how the audience will react. In passing, another fundamental rule, usually learned the hard way it seems; never ask your audience to turn in their seats nor, no matter how fantastic the roof, make them look up till they are in danger of breaking their necks. The only thing you actually break is that fragile thread of concentrated attention on which so much depends. Special effects; snow, fire etc.; can only be used once with real impact, and to switch attention from far left to right by sudden changes of light is a useful "shock"—but must be used sparingly or bewilderment sets in.

Imagination is naturally the key and if the lighting director is any sort of artist rather than a mere technician he will have plenty; and it need not involve great expense. I work in churches to avoid the perils of the weather and add a vast sum to the budget for heating if it is in winter: In one production there was a particularly attractive Cross; I wanted it to "glow" in an expanse of absolute darkness without shadow, reflected or overspill light anywhere. But it was in full view of the audience; nowhere to conceal a lamp nor one small enough to avoid casting a shadow. The answer was to use three pre-focused torch-bulbs and a 9 V battery, the bulbs set in plasticine 2 ft. from the Cross, hidden by a wooden strip. They were switched on when the area around the Cross was brilliantly lit, then as the other lights faded the Cross stood in splendid isolation, gleaming. The impact was tremendous despite the unorthodox and low power source, the cost even lower.

Using more conventional but still "unprofessional" equipment, another effect cost so little that it is worth bearing in mind that sometimes unshielded domestic bulbs can be more effective than the most expensive lamp. The production is a special Christmas one for smaller churches telling the story of the *Nativity*. If you ask how the story can be of anything other than the building, which is normally the "star", let me say that it has been done with constant critical and financial success—even the BBC liked it! *The Nativity* brought a comment from photographer Sir George Pollock which has been taken to heart ever since when it was first produced, "Nice, but not enough colour". Taken to heart by my bank manger too because too much colour costs too much money—a practical if inartistic check on over lighting! The most recent production was in a church lacking architectural detail though having a fine arch over the Nave (in front of the audience) and an "odd" little "window" let into a wall at the head of curving steps by the Communion rail; originally it was an access to a gallery or so I suppose. The script called for a "cold" effect. The only light in the darkness was a single bulb concealed in the angle of the steps and throwing through the window giving a steely-blue which slowly cross-faded to a rich, warm amber-gold which was then spread through the entire building as other

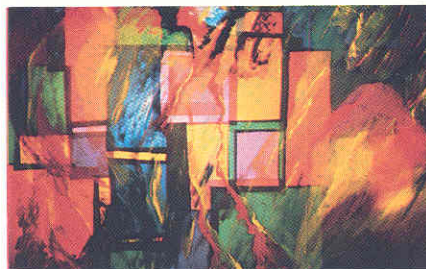
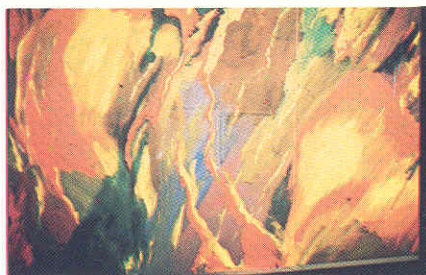


lamps faded up. Two coloured 60 W bulbs in ordinary sockets screwed to a wooden batten fixed out of sight at a total cost of about £1.30! The effect lasted 35 sec; for six performances 0.6p a second!—against 5½p a second? That was at 1974 prices when *Royal Windsor* was presented with a star studded cast: Marius Goring, Francis Matthews, John Bentley, Bob Danvers-Walker and Reginald Marsh—all recorded in the studio and the resultant tape worth every penny. One episode related to the burial of the beheaded Charles 1st. The Governor of Windsor Castle had refused to allow a service in the Chapel so the night before the body was taken by torch light to the Parish Church, the service read and the body returned to the Castle. Researching the script I found a description of the next morning by Charles's valet: "When the coffin was brought out into the courtyard the sky was serene and clear, but presently it began to snow, and the snow fell so fast that by the time the corpse had reached the west end of the Chapel the black pall over it was all white" an obviously visual moment to be created. Windsor church has a finely carved screen separating the audience from the Sanctuary, and as Marius Goring began narrating the passage the entire church became dark except for the flickering torchlight effect in a side chapel. As this faded the screen was "backlit" so that the carving was in silhouette, beyond, all darkness. Very gradually the Sanctuary became a deep, royal purple, the black shadow of the coffin appearing to lie on the altar. Then snow began to fall, at first through the purple but as the colour was faded and the screen darkened it fell faster and faster while the tall wooden Cross on the top of the screen shone brilliantly and the black "coffin" became white as music swelled and rang round the church. Simple to achieve, a most memorable effect—but what a cost! For those 54 sec:

- 4 × Patt. 137 @ 55p each per week to backlight screen
- 8 × Patt. 137 @ 55p each per week with purple filters
- 4 × Patt. 123 @ £1.10 per week each with purple filters
- 1 × M.R. "Inkie" @ £1.00 per week with purple filter for shadow over altar—black
- 1 × Patt. 52 with Snow effect @ £3.75 per week
- 1 × Patt. 23 @ £1.10 per week to give white "coffin" effect
- 1 × Patt. 23N @ £1.25 per week to illuminate Cross on screen.

Not including cost of filters, cables, operator's time etc. the total weekly cost was £18.10—and six of these lamps were used only for that one effect!

Cost has been emphasised because the biggest single factor affecting the lighting director is staying within his budget—if he wants to work again! So how does he decide what to light? Nothing moves except the eyes of his audience (though I have been more than once assured that actors have been seen—proof of the power of illusion!). Once the features of interest have been isolated he must become a "painter with



The 2-way screen showing detail and effect: a useful addition where building lacks feature.

light". He can be a Rembrandt playing with the blackest shadow and silhouette, or a Monet using Impressionist colour. His job is to be a "mood merchant" heightening the effect of the words with the pictures he paints. If he is not familiar with the basic concept of colour, highlight and perspective he will not be employed except at the Producer's peril. It is amazing the speed with which the bad word travels even in a large town! But he can "travel" his light, create extraordinary effects, even seem to set a Cathedral ablaze (and given an overload on his cables he can do it for real if he is not careful—old timber being tinder dry) or to chill the audience with falling snow, run water down walls, hurl harsh shadows or jerk them awake with unexpected blazes of light—he is limited only by his technical skill, his imagination—and his budget.

Among notes for past productions I find: *Silhouette Cross on altar, cross-fade to front lit (and make sure polished daily for "sparkle")*

*Pick out arch and pillars of tower support, slowly fragment colour when script calls for tower to collapse. (Actually this effect worked so well that one or two gasps came from people who knew the tower had really collapsed twice in its history and the production was to raise funds to stop it happening again!)*

*After 1st World War sequence, as "Last Post" played—fade all to leave colourslide of Regimental banner broken over walls: travel Strobe lamp across east wall for train effect: on sound stained glass in east window to "glow", then become sunburst of colours.*

Stained glass is always effective but it is necessary to position at least two 1,000 W floods directly in the audience "sight line"

some 20 plus feet from the window if real brilliance is needed. In churches lacking interest the "two-way" screen can be an effective temporary addition: it can be effective anyway! Developed with assistance from Donald Walker (whose "Walker Rig" was featured in TABS Vol. 34, No. 1) it consists of a translucent screen mounted behind the altar. Lit from in front it is a modern abstract painting, the colours changing depending on which filter is on the lamp being used. When front lighting cross-fades to lighting from behind the screen modern "stained glass" appears and the "abstract painting" vanishes before their very eyes! A trick to be used sparingly—but magical. Other additions to the church may need to be made. For "Royal Borough" the East Surrey Regiment museum lent a uniform, helmet and drum to add a splash of colour against the grey pillars when the script told the story of their achievements in two World Wars.



A splash of colour against the grey.

More recently, with the aid of Sir George Pollock, colour slides have been projected to complement the lighting. This was in a church with no stained glass in the east window so a fine muslin screen was hung inside the window. It vanished like a theatre gauze when lit from outside, the shadows of the leaded panes making faint but attractive patterns. But when the slides were projected onto it, it became a screen, as did the entire wall. The final sequence; using two projectors and a Duo-fade unit mounted in the organ loft at the back of the church, was a Head of Christ. Taken of a carving less than an inch and a half high the pictures covered the entire width of the wall with breathtaking effect. Later one critic remarked that "purists" would not approve—but "Purists", if they exist for so new a medium as *Son et Lumière*, do not pay the bills with their carping: and the audience both paid and approved.

In the final analysis *Son et Lumière* can only succeed if it is treated as an entertainment: which means that the most important people are not the Producer, Lighting Director or Writer—but the audience. And as Noel Coward, the Master quoted earlier, said—an audience will accept almost anything: except boredom.

*Robin Close trained at R.A.D.A., had his first lighting job working a follow-spot at London's Fortune Theatre, and is now a novelist and script writer as well as producing Son et Lumière. Among his credits are 'Royal Borough' and 'Royal Windsor'. Photographs by the author.*



## African Abstract

Excerpts from the 1976 International Symposium of the South African Institute of Theatre Technology (SAITT) held at the Civic Theatre Johannesburg last August.

### Mannine Manim

Theatre of any country has been described as a mirror of the people and their culture, and it is in this area that our theatre is still an infant: an energetic, mewling and sometimes puking infant. But each passing day it is gaining strength and momentum. I am referring, of course, to our own playwrights, actors, designers, directors and technicians. The last 10 years has been an exciting time for our theatre, with proof being shown that South African playwrights can write commercially viable plays, particularly Blacks and Afrikaners.

### Anthony Farmer

All managements, particularly commercial ones because of the cost, seem to be completely ignorant of the importance of stage staff. The question is always "Do you really need that many?" when you've just asked for the minimum. I think it is because they are never seen by the paying customers and always are asking for more time to use the stage. Time—that is another problem. Actors are given weeks to sort themselves out and stop bumping into the furniture, but a stage crew is expected to get a mammoth show set, lit and running virtually overnight and woe betide any stage hand who accidentally runs a piece of scenery into an artist.

It really seems to me that the majority of people who control the destiny of the theatre do not, or will not, face up to the fact that it is an industry like any other and must run as such. It is easy to say, "You can't get good people to work in the theatre". Of course not, when there is no hope of reward. There will always be the few theatre-mad hippie types who sleep in odd corners of the auditorium, eat hamburgers continually, and then press the wrong button at the wrong time and ruin everything; but this is not good enough. Until the time comes when a *show does not go on* because the technicians have finally decided they've had enough and refuse to work under the rotten conditions given them, I cannot see managements changing.

The theme song of the theatre is surely "Promises, Promises" because that's exactly

what it lives on—*promises*. Promises that the sets will be ready on time. Promises that time will be allowed for technical rehearsals and Promises that a full staff will be provided.

### Dennis Schaffer

In a sense, of course, all new forms of theatre are *experimental* and in this particular sense the history of the theatre is a history of successful experiments. Of all the countless productions there have ever been, many have been well written, well acted, well directed, financially successful, socially popular—and forgotten within a few years. On the other hand there have been productions which, in their day, were rejected by all but the very few—and still found their way, in time, into the pages of theatrical history. Theatrical history focuses upon experiments that have been significant by the virtue of the fact that they have led the theatre beyond the narrower confines of what it was at the time. In common with all artists, theatre artists have very often been rejected because their attempts to lead an appreciation beyond the known have been seen as dangerous, pretentious, or subversive challenges to the *status quo*.

### Dorothy Tenham

Teaching where I do, I often hear sweeping statements made about the value of formal teaching for actors. "Acting can't be taught." "Actors are born, not made." There is a half-truth in these statements which also applies to good staff. Actors *can* be taught the technique of their craft; stage management, property makers, wardrobe staff, lighting designers, electricians, and carpenters can all be taught the technicalities of theatre work. If none of these craftsmen have the personality and gifts necessary to bridge the gap between the hard facts of their trade and the much softer compromises of working in a *people industry*, then they will remain for ever more "good technicians" rather than "good theatre craftsmen". To help the trainee towards bridging the gap requires the facilities of a theatre environ-

ment. The trainee should not be taught in splendid isolation during his entire training period. Ideally, he requires a full working theatre which has frequent changes of programmes playing to a paying public. The more varied the programme, the more comprehensive the training will be.

... there is no substitute for learning—and the practical application of the knowledge—in a realistic situation. There is no substitute for taking down intelligibly a fast moving and complicated piece of blocking with actors and director and then having to refer to it moments later when the scene is re-run on the rehearsal room floor and actors have lost their way. There is no substitute for a director sitting next to you, making noises like a dawn chorus and never mentioning it again until he wonders why you left it off the sound tape! There is no substitute for learning how actors pause, need prompting, need calling. All this must be done with actors present and in a true situation if the theory is to become a craft.

... Over the years I have found that the main problem in planning a training course for theatre staff is not what to teach, but what may be safely left out. Isolated in a purely training environment, it would be easy to go on teaching for ever. I think it is as important to teach students how to go on learning from a normal theatre environment as it is important to teach them the theory in a classroom.

### Jan Nel

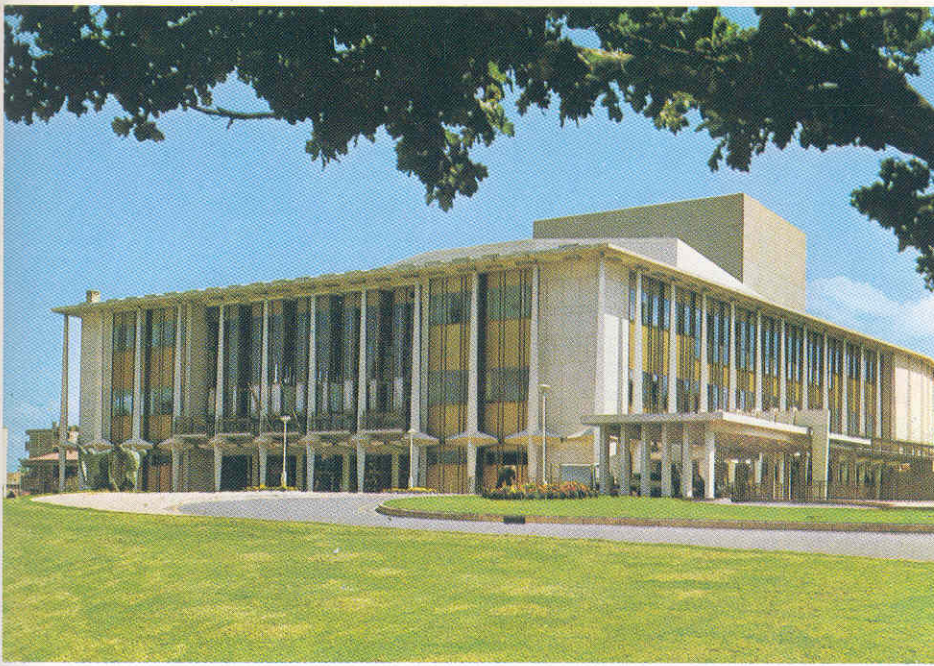
So much time and money is wasted by chasing architects through overseas countries on a rat race from theatre to theatre—sometimes at a rate of up to six theatres a day—in order to make notes on how to build a theatre. It must be very confusing and frustrating trying to combine all the outstanding bits and pieces of different theatres into one new marvellous theatre.

### Mannie Manim

To spend one's life behind the safe contracts and the aesthetic values of state-run subsidised theatre; to be anaesthetised to small or empty houses by your pay packet at the end of the month; to be battered and bashed by bureaucracies attempting to run theatre companies, is to deny oneself if you are a theatre person of a great deal of the thrills of the profession which makes it really worthwhile.

### Helmut Grösser

Theatres being planned now must be planned for the future. Most of those theatres now existing in Europe, which were not destroyed in the last war, have been operating for about 60 or 80 years. To ensure that the theatres presently planned will be workable in the year 2050, they must be planned with that period of time in mind.



*Civic Theatre, Johannesburg.*

If anybody tries to persuade you to overlook the possible evolution in the next 80 years, do not believe him—planning for the future is no longer science fiction, but a very serious science. Industry and economics are referred to as sciences, so why not also treat as sciences theatre techniques, theatre architecture, and theatre economics. Do not restrict architecture and the technical aspects of theatre design to present conditions but bear in mind anticipated developments in architecture and technical theatre requirements. Artistic conditions later on will change, but architecture and technical facilities are invariable once they are incorporated in the structure. Learn from the mistakes that we made in Germany when we rebuilt after the Second World War. We were more concerned to reconstruct the bombed theatres instead of looking for new shapes. All our famous (or notorious) machinery was installed in the old skeleton and this forced us into preserving the old method of producing theatrical performances.

We are living in a century of technical progress. It is very romantic, and there is a kind of nostalgia, to see an improvised theatre room; to cry out “How lucky to have such a room without this damned lot of techniques!”. Why not indeed? But to work and perform in such a small room for years is another thing. Given that we are working with directors and designers of competence and sensitivity, we should also think ourselves lucky to be working on a well-equipped stage and using the most modern techniques. And, as labour becomes more expensive, we must continue to look to alternative methods of operating. Do not believe automation will never be possible in theatre work. The first such steps have already been taken in our lighting equipment and one should take every opportunity to employ modern techniques and to search for new ones to facilitate our daily work. I know that there are amongst us those who decry this modern technical theatre; however, I do believe that the propagators of these tales no longer have a wooden washing tub at home

but have installed modern automatic-controlled washing machines. I would ask you to remember the technical complexity of effects equipment in the ancient Greek and Roman theatres. Remember also the technical designs of Leonardo da Vinci. Remember too the highly sophisticated techniques of the baroque theatre. Theatre is not only an intellectual activity of the mind, it can also be an experience for all of the senses—and especially the visual senses.

All of the present and future sophisticated equipment is necessary: in stage, in sound, and in lighting areas.

Certainly, poor theatre can be very good theatre. Open space is only one possibility for performing theatre. Grand opera is as much a part of the performing arts as street theatre. The black box is another one and so is proscenium arch theatre. It is only a

question of taste and not of social status which kind people prefer. There is a desire for all kinds of theatrical presentation and we must plan for all possibilities. Plenty of time we spend in discussions on money and subsidy and you should remember that in past days travelling comedians had to pass round their hats to collect money to survive. Following that, sovereign princes and later private financiers paid for entertainment in the performing arts. Now it is the task of government. Pride of independent approach to theatrical operation is out of place.

Economy and planning are no longer the privilege only of industry and commerce: the efforts of architects and technicians to introduce these concepts into theatre design and operation must be supported. For example, the sudden reduction of passage heights or a too high or too low loading platform can cost hundreds of working hours per year. A confused arrangement of rooms destroys efforts to achieve good working conditions and effective management. Nowadays every manufacturing workshop is designed for maximum efficiency of output from minimum labour input. To many theatre people these concepts are still foreign and the idea of comparison with a factory seems to be both menacing and strange—however, it should not prevent a consideration of how productivity can best be increased.

**The symposium concluded with the passing of the following resolution:**

“That this representative gathering of people of the theatre, in the interest of the continued existence of our business and industry, move that the authorities be informed of our unanimous and very strong conviction that all theatres in South Africa be opened to all peoples of South Africa as a matter of greatest urgency.”



*Malcolm McClean (Centre) explains an MMS to Helmut Grösser, Ron Schwartz and Dorothy Tenham on the Rank Strand Electric Exhibition Stand at the SAITT Symposium.*

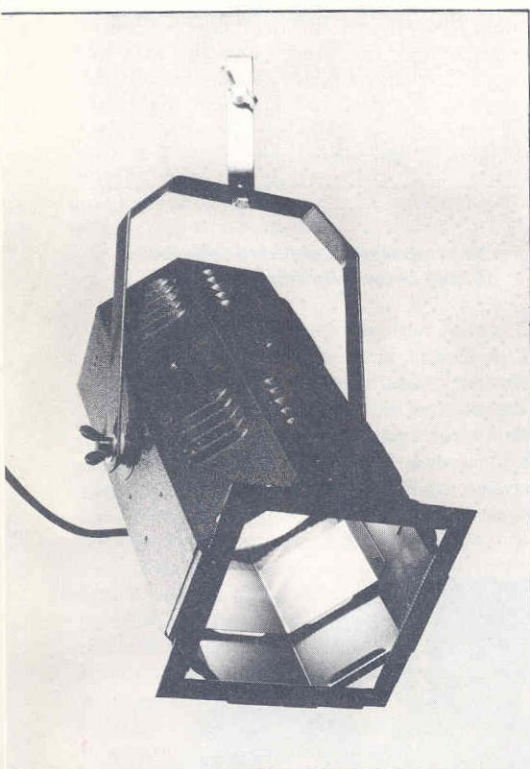
# For The First Time On Any Stage

PHILIP ROSE

The past year has seen the introduction of several first time additions to the Rank Strand Electric product range.

The "PARBLAZER" is a new luminaire designed to use 1,000-W 120 V tungsten halogen PAR 64 sealed beam lamps. To allow the spotlights to be used on 220/240 V a special "series" connector can be supplied as an accessory. Hopefully, it will not be too long before an adequate range of suitable lamps is available at 220/240 V.

The "PARBLAZER" comes into its own where high intensity punch lighting is required for musical groups, pop stars, arena lighting and for the lighting of major product at motor shows, boat shows and the like.



Parblazer

PAR lamps come in a wide choice of beam, colour temperature and life. The user can then get the best value for money depending upon the application.

Generally speaking the PAR 64 beam pattern is oval rather than circular. For this reason a knob accessible from the outside is fitted to the "PARBLAZER" so that during set up the lamp can be rotated to establish beam patterns to suit the designer's needs.

A novel colour frame, without cross wires, is supplied with the "PARBLAZER". This allows for the use of strong vibrant colour filters without wire burns which would otherwise occur due to the high efficiency of the unit. Ventilation is good and the construction, whilst being light-weight and simple, is robust.

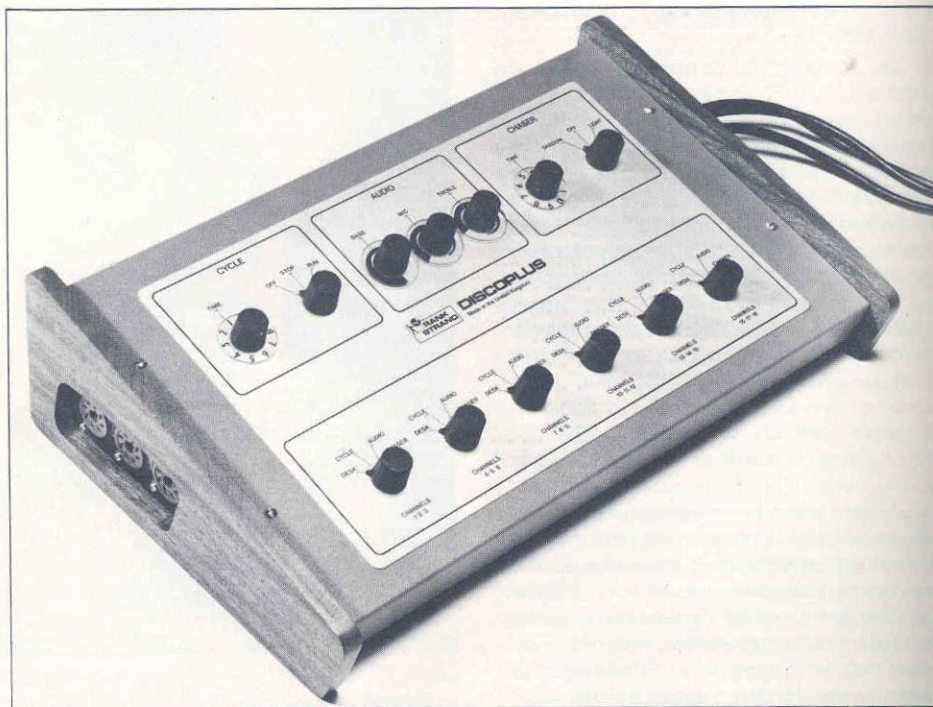
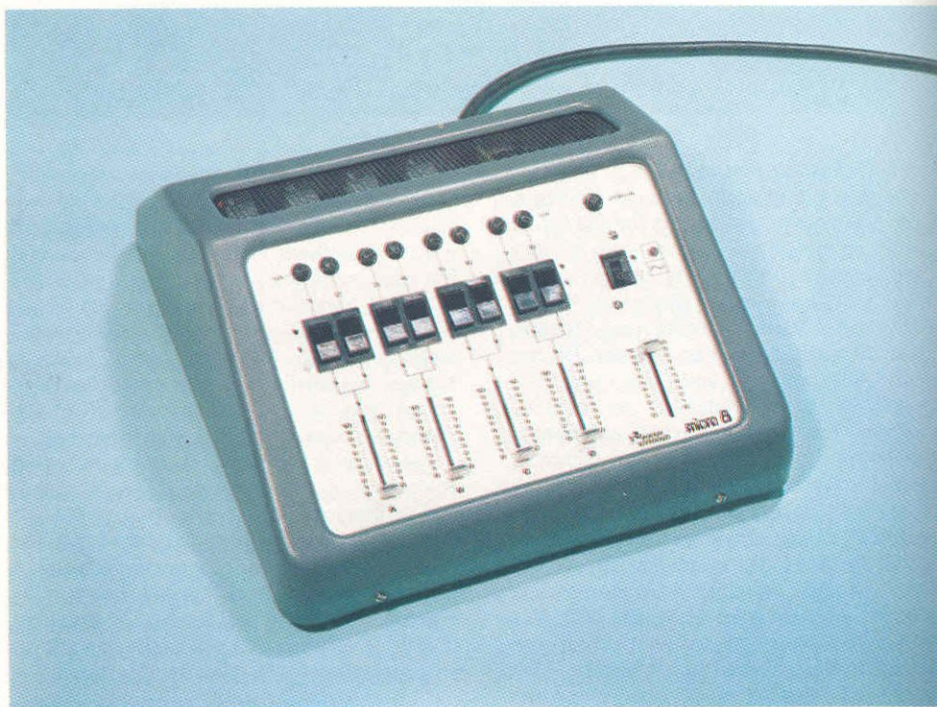
Another new member of the product team is "MICRO 8". This has been long awaited and in terms of performance is an electronic replacement for the very popular but now obsolete "Junior 8".

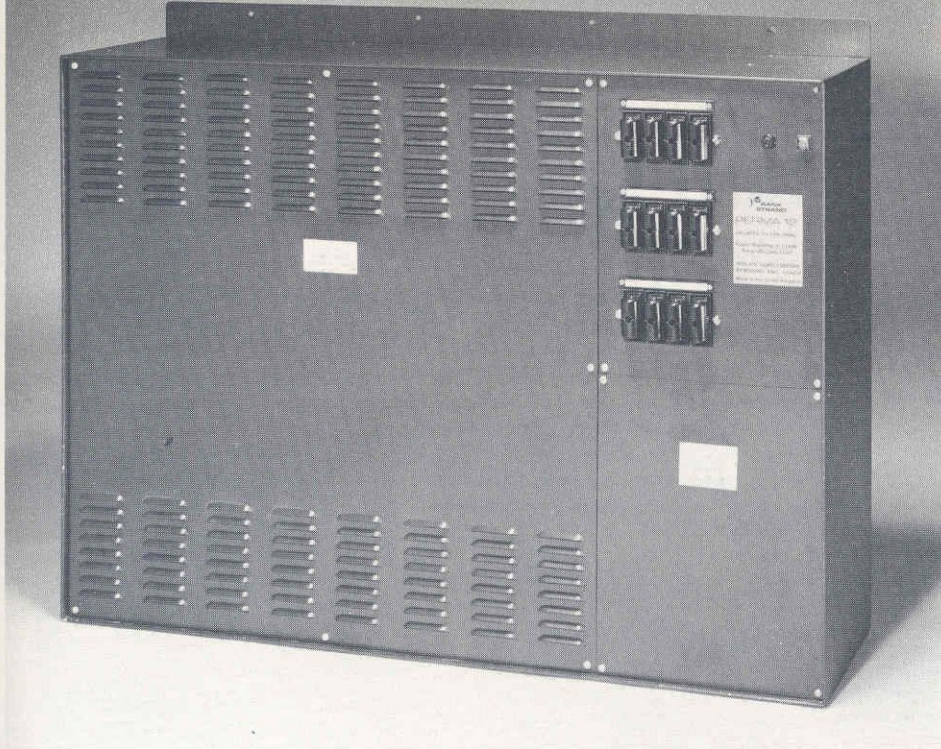
"MICRO 8" provides control over eight 1,000 W (maximum) circuits for 220/240 V tungsten lamps. There are eight, 5 A, three

pin sockets recessed along the rear angled panel and each of these can be selected to "Full on"—"On dimmer" or "Off". There are four built-in solid state electronic dimmers with filtering to professional theatre standards, each one of which is fully rated to handle two 1,000 W loads simultaneously. Control of the dimmers is by four finger-tip operated fader levers and in addition a master fader is fitted.

"MICRO 8" is well styled and made in strong but light-weight materials and is the ideal control for simple lighting in pubs, small clubs, hotel entertainment areas and even classroom drama where the scale of presentation might be small but the required quality of control high.

Also joining the team is "DISCOPLUS".





Perma 12

This can be used on its own or in association with a "MINI-2+" System. It will control up to 18 separate channels of tungsten lighting (separate dimmer channels are required which can be Mini-2+ or similar). Any of the

groups of three channels can be cycled, audio modulated or "chased". Different circuits can be controlled in different modes simultaneously and can also be used in association with a conventional pre-set desk.

This is another product which will considerably expand the range of lighting effects possible in clubs, pubs and discos.

Two other additions are "PERMA 12" and "MINI-PATCH". These join the "MINI-2+" range although it looks as if the "PERMA 12" will have appeal for architectural and non-theatre dimmer applications. It is a wall mounting rack containing 12, totally self-contained thyristor dimmer modules each rated at 2,000 W, 220/240 V. The rack is designed for single or three-phase and neutral supply and incorporates close-excess current protection for each dimmer.

The "PERMA 12" is really quite small and has been designed mechanically so that two racks may be stacked one on top of the other. Internal wiring is to terminals ready for connecting to permanent wiring or adjacent sockets as may be required.

The "MINI-PATCH" is a simple but practical connection system for use with "MINI-2+" dimmer packs. In its standard form it provides for tangle free cord patch selection of 24 permanently wired circuits to one or two MINI-2+ dimmer packs.

All these new members of the Rank Strand product team are intended for shelf availability and can be ordered directly through your Rank Strand office or distributor who can supply further details.



# Multi-Q

The memory revolution continues. The latest development in the *more facilities for less money* progress of light intensity control comes from North America where Strand Century have produced MULTI-Q.

As is usual in the history of stage lighting, Multi-Q has been made possible by the utilisation of volume produced components developed for applications far remote from theatre. In this case they are:

- Micro Computer
- MOS primary memory
- Floppy Disk secondary memory
- CRT video display

Having a soft-ware programme, the system is adaptable to the needs of an individual user but the basic facilities are:

## CUE COMPOSITION

Normal channel access is by a standard one-lever-per-channel single scene manual preset module. This can be used to compose lighting pictures either *live* (lighting the stage) or *blind* (independent of the light on stage).

## RECORDING

A *stage record* push memorises the light currently on stage, while a *manual record* push memorises the levels currently on the

manual preset levers. The recording will include any fade time set in the *level/time display* window.

## PLAYBACK

There are three playbacks and all of them may be used simultaneously. A/B and C/D are dipless crossfaders while E/F is a split fader to allow profiled crossfading. A rate controller selects manual or rate playback and allows overriding of recorded fade times. There are sequential facilities and for cue insertion it is simple to memorise a jump to any memory number. There is an overall system fader which masters all lighting levels on the stage irrespective of origin whether manual or contributed by the memory through any of the playbacks.

## MODIFICATION

There is keyboard access to any channel for modification, without matching, by a stopless rotary level controller. (Clockwise rotation increases, and anti-clockwise rotation decreases, the level of the selected channel.)

## DISPLAY

A video display unit can be selected to give any of the following displays:

(A) State of the stage, showing progressive levels of channels on the move.

(B) Channel levels of the manual preset.

(C) Channel levels in any addressed memory.

## SECONDARY MEMORY

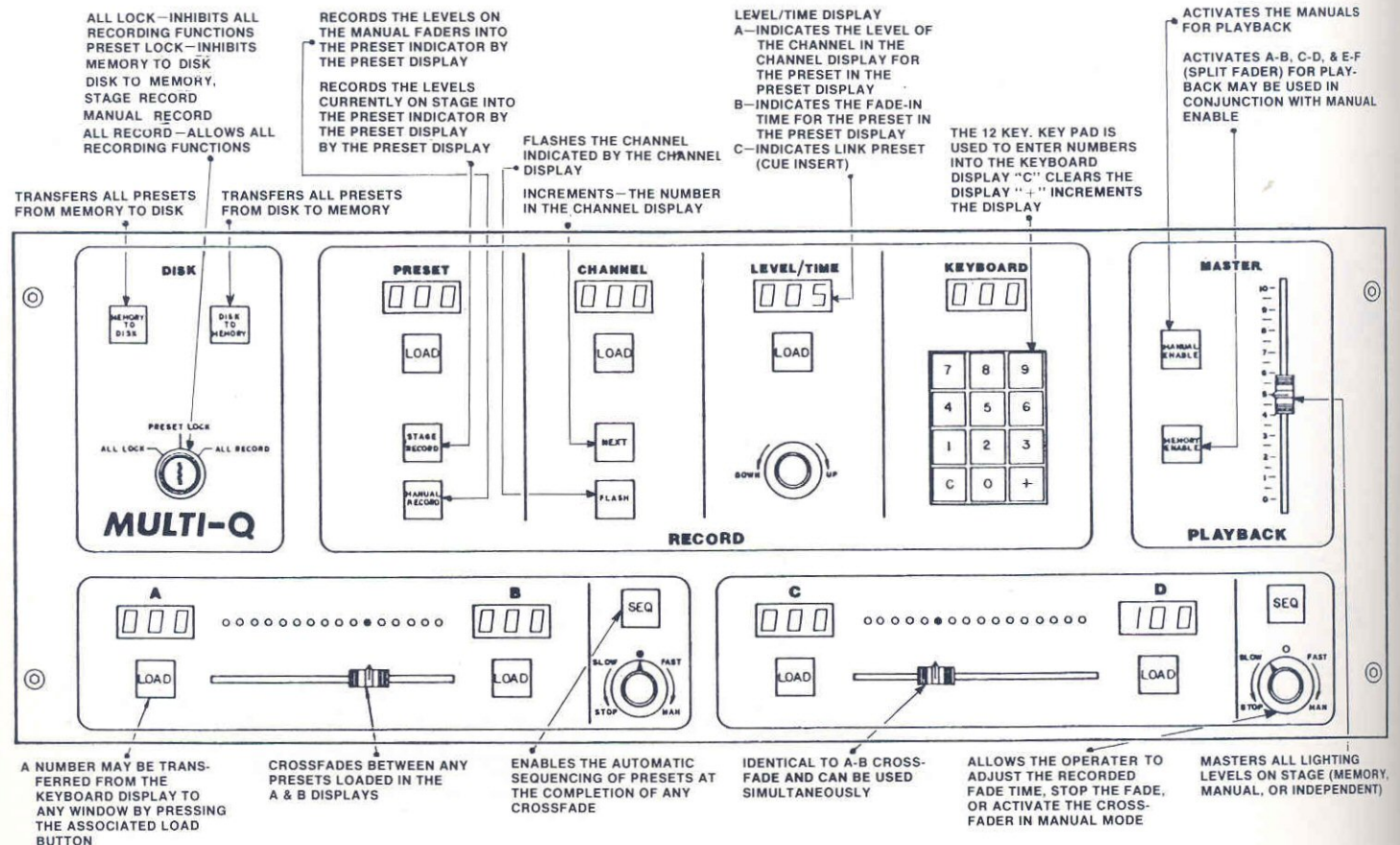
Pushes allow instant transfer to and from the secondary Disk Storage. (On a 120-channel system, a single disk can provide library storage for up to 2,000 memorised presets.)

## BACK-UP

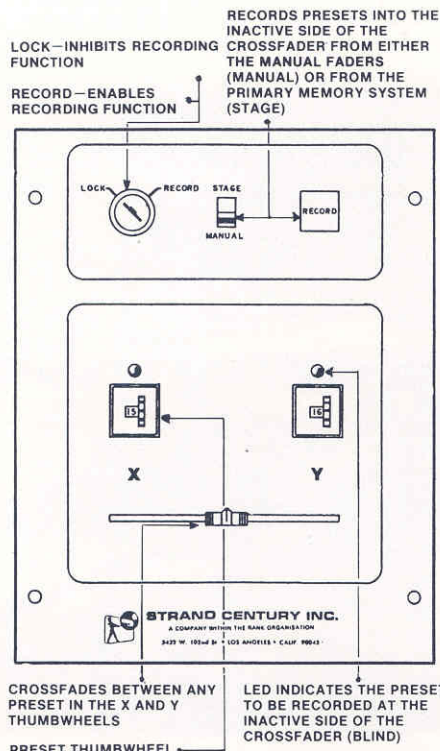
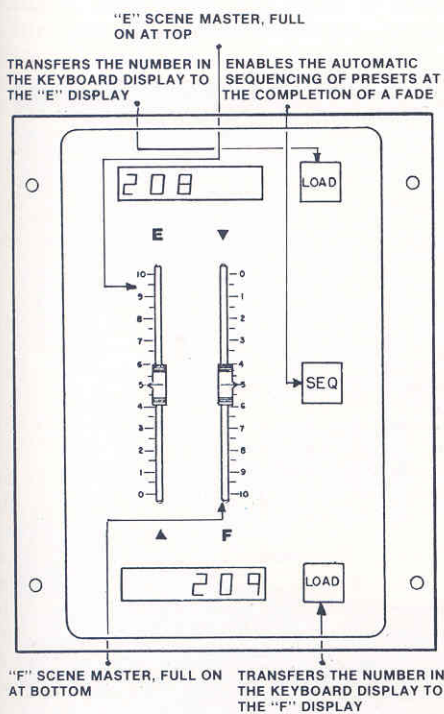
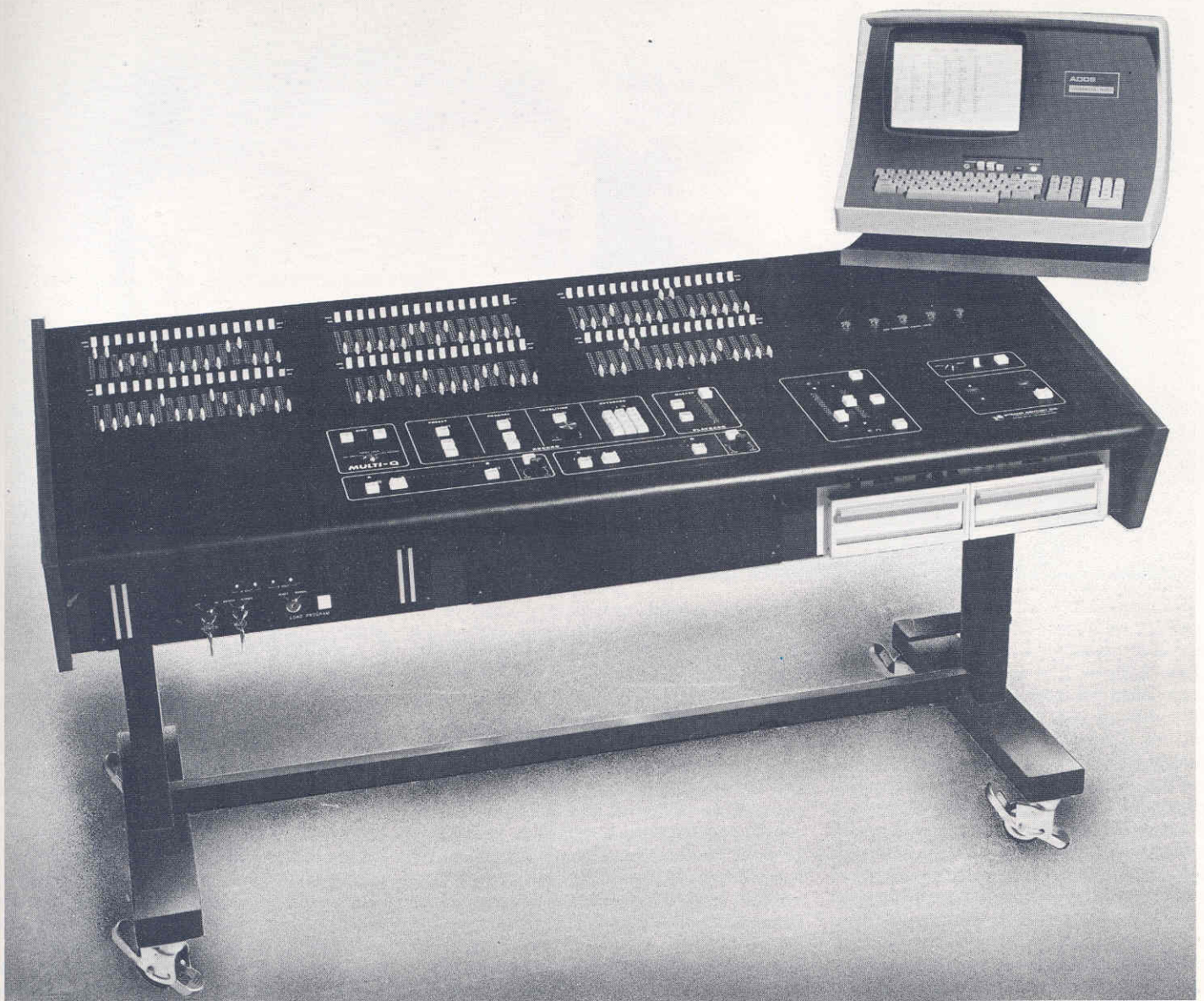
There is a back-up system completely independent of the main record/playback system. This back-up is unique in that it permits the recording of 16 complete presets (i.e. level memories, not the conventional pin-patch groups). By thumb-wheel switching these memories can be selected to the X/Y crossfader. If necessary the back-up memories can be progressively re-recorded while on the inactive side of the cross-fader.

## ERGONOMICS

All numbers whether required for channel, level, memory, time or playback are generated by a single keyboard. Routing to the appropriate function is by a *load* push local to that function and its number display







window. The system is self-contained within its desk which includes twin powerpacks. The edge of the desk is padded to provide a comfortable rest for the operator's forearms and wrists.

#### A PERSONAL VIEW

I cannot give a detailed considered judgement on any system that I have only worked for an afternoon, *but* I have to report that I came to basic terms with Multi-Q in a far shorter time than I have been able to assimilate many systems offering fewer facilities. Cockpit drills are simple and the controls function with the sort of simple logic that is not always a feature of lighting control desks. I suspect that Multi-Q may well turn out to be just about the most cost-effective system yet to be devised in the memory revolution which is changing the face of theatre lighting.

In the United States, the first system was created for the National Company of *A Chorus Line*, a further dozen are installed and by the first of January last the order book stood at 35. In Australia, the first system will be for the Melbourne Theatre Company.

FRANCIS REID



# Wembley Conference Centre

BRIAN BENN

My visit to the Wembley Conference Centre and the impressions I gathered were coloured by various factors which call for the most conscientious and careful examination of what I have to report of the place. First, a long drive on the wettest day of the year which produced traffic conditions of the worst kind. Secondly, using the excellent map provided, I found the biggest and emptiest car park in London awaiting me, which gave me the splendid opportunity of using the gears of my car which had been neglected for two hours, and enabled me to try a touch of the Steve McQueens on acres of wet concrete. Thirdly, my fantasies were firmly dashed by a long walk in the rain to the entrance through the evidence of faulty or overstretched drainage and the unlovely objects covered by the terms "Site Plant and Sub-Contractor Accommodation", which nicely established that a good deal of something had yet to be finished. Lastly, it was "Press Day", when everyone talks and drinks and laughs and walks about and gets lost and falls over unfixed carpet and apologises to workmen about walking through their cement or adhesive or incomplete glass doors. There was not a lot of the last problem; all but essential operatives seem to have been banished to the lower regions of the building; I passed quite a few whilst I was seeking the hospitality area, and paused to watch a 20 a side contest involving a Coke can, and I can report that the men were fit and well and that England selectors for the next World Cup could do worse than visit the Get-In area of the Conference Centre on a wet day; a bundle of used notes could get them the star striker of Cementation Building Ltd. and their 40 or so sub-contractors.

Sorry about all that stuff, but atmosphere

is so important to this sort of thing. I was told by the Editor that my brief was to examine the claims of the Centre to be a viable home for live entertainment. I imagine he views Conferences as something different. I sat in the Avon Suite, consumed two excellent cups of hospitality, laid out four sharpened pencils, and a pad, read with intense interest a handout on "Random Matched Designer Birch (which gives the warmth and originality of high quality timber with ease and economy of application)". This happened to be first item in an impressive folder thrust upon me by a large and cheerful young lady. A brief

introduction was given to the day by the managing director of Wembley Stadium Ltd., the clients, who contrived to insert a plea for "no knocking criticism" three times in a speech of a couple of hundred words or so, which made the company feel that there must have been a lot of it about. Then it was split up into parties time, and we all set off with guides, for a sprint about the factual evidence.

The venue provides two interesting spaces, the "Avon" and "Severn" Suites, which can be subdivided by means of steel panels in tracks into five smaller lecture theatres, each with its own little stage and



*The main auditorium showing acoustic reflectors and proscenium walls.*



*The Severn Rooms with fixed seating, translation booths and television monitors.*

*The Avon Rooms set out for a meeting.*

visual aid facilities. The stage dimensions I judge to be suited best to the chalk and chat type of entertainment, though I see no reason why a small musical presentation would not work there, subject to the high insulation claims of the steel panels being true; I can testify that they are easily movable; I had a nasty struggle with a track junction which was probably due to lack of evidence of haste to the nice new boring ceiling with its alimentary tail crammed through to a hidden source.

I was drawn most strongly of course to the Main Conference Hall, with its seating potential of 2,500. First impressions: vastness, caused by a shallow seating rake on a semi-encirclement of the large 12-lift forestage/centre auditorium floor, coupled with a very light coloured wall and ceiling finish. Quite a few unusable seats in the fixed side areas when the show is entirely on the 60 ft. by 40 ft. proscenium stage. The main hall seems to be committed by design to the use of the forestage, but performer access to this seems to be only through the proscenium, which can be tricky in a busy show, and causes overwork on the D.B.O. facility between scenes.

The main hall lighting positions, judged in relation to the available acting areas, are not very good news. Over the forestage, a selection of luminaires which can only be good for down lighters for orchestras, being too high and too steep for the pros. stage front, hard to get to for the workers, and hampered in function and access by a large number of triangular panels with adjustable rake arrangements. The rest of the shallow ceiling features the "removable" plaster panel idea, based on the EXACT dimensions of some (probably unobtainable) spotlight, and lots of 'em, and on the fixed lines of fire school of lighting and trench warfare. The present technical staff have obviously been politicking and striving, and certain curved lighting bars were in evidence,

placed in a fine heretical and more useful location below the ceiling.

For lighting designers, there is a super bonus. You know the way you run out of things to talk about while they change the set, well here you can spend the time working out a programme for fading the house lights. Seriously, there's a rather interesting brick faced pros. wall of a warm brown colour, with, I quote, "quasi-irregular projections", which are sculptured by lots of downlights, which can be phased to fade in succession or pulse in groups, and that. Some enthusiast had them going on a quarter second curve whilst I was there, which gave the appearance of a bad wiring joint somewhere, but the possibilities could be judged.

On the pros. stage, there is no feeling of vastness; judgement was impaired by what

seemed to be an enormous number of drapes, a massive sculptured backing, cinema screens, B.P. screen, and the detritus of getting things ready for Press Day, e.g. four men playing cards on a mountain of carpet offcuts. Upstage there is a smallish dock, without fire separation from the main stage, so you know what you can do with your props baskets don't you, and a lift for bringing the stuff of illusion up from the delivery area. Should any particular stuff not fit into the lift, some thoughtful latecomer to the team has caused a hole to be cut in the back wall (no doubt to be known hereafter as the Scenic Input Facility), so that the odd awkward bits can be speedily delivered via a side road, a staircase, a flat roof, and a set of glass doors and a foyer.

Mercifully, the main hall has been provided with an MMS control for 120 channels, which is pretty small for the vast possibilities for performance areas, but at least provides a chance to keep abreast of a venue designed for maximum daily usage, without excessive rehearsal time. To detail the extensive communications and audio-visual facilities would need an issue of TABS to itself. If its as good as the bumf, it will be fantastic; I was unable to gain more than an impression of numbers of men deep in thought, a hell of a lot of wiring indecently exposed and an impressive array of racked equipment which will no doubt have its covers fitted very shortly.

To the TABS reader I would say go and take a look around. The staff are very helpful and I am sure that there are lots of details to interest a wide range of specialists. I didn't enjoy the experience very much, but I was suffering from a rejection phase for concrete and lino tiles and things which combine originality with ease of application (and separation). And I had a rotten start to the day. It was still raining when I went home.



*The Greenwich Room set out for a banquet with boxing ring.*

*Architects: R. Seifert & Partners  
Consulting Engineers: Pell, Frischmann & Partners  
Main Contractor: Cementation Building Limited*

# Braunschweiger Staatstheater



Braunschweig's long theatre tradition began with the original *Herzogliches Hoftheater* which existed from 1690 until destruction by fire in 1856. By 1861, a new theatre had arisen on the site where it still stands, now named *Braunschweiger Staatstheater*, in beautiful park surroundings on the outskirts of the City. It was rebuilt between 1902 and 1904 to conform with the new building regulations for European theatres following the fire in the Vienna Burgtheater; and, following war damage, the theatre was restored in 1948 to the old drawings.

In 1935 a Bordonni transformer was installed for lighting control and this was replaced in 1962 by magnetic amplifier dimmers with servo-motor desk and four presets. Last summer the theatre's lighting control was brought right up to date with the installation of a 240-way 256-memory DDM—the latest type of DDM with digital wheel connected to the amber pushes in the rocker channel controllers.



# To Look Forward First Look Back

BOB ANDERSON

There can be few who have written more about theatre technology than Fred Bentham. From the day he joined the little theatre firm of Strand Electric in the early '30s he seems to have been bursting with things to say and within a few years, having finished inventing his Light Console and reshaping the main showroom to suit his recitals of Colour Music, he became a founding contributor to TABS. As we now know, Strand Electric grew fat on the inventions of F.P.B. and in the post-war television boom Strand sold the natural descendants of the Light Console to studios throughout the world. Surprisingly, F.P.B. did not become editor until 1957, but it can be no coincidence that under his care TABS continued to grow into a respected international magazine. I suspect F.P.B. will agree that the commercial success of Strand must have been at least as much due to the existence and strength of the give-away TABS as to the merit of their rather more expensive products. For, of course, the lively, provocative, intelligent discussion of the wider problems of theatre lighting attracted lively and gifted minds while still at school or university and retained their interest when the need to earn a living arose. Many such people went into the profitable worlds of TV and theatre management and, when the time came to spend money on new equipment, they naturally turned to the names they knew and insisted on getting solutions to their problems in the way contributors to TABS had said should be possible. And again, when a new generation of experts were needed to harness the computer for lighting control, the rival companies had a choice of talent who understood the technology and also, from the pages of TABS, the nature of the problem.

But all good things must come to an end and, as he points out at the beginning of the book, Frederick Bentham is no longer with Strand. Indeed, Strand Electric is now only Rank Strand in the eyes of those with golden memories of times past. Nevertheless, on the credit side, new inventors have produced even more marvellous lighting controls; TABS has become Tabs Stage Lighting International and has a new and equally respected editor, and is printed in full colour (though its loyal readers now have to pay!); and F.P.B. himself now has time to edit and write the major part of the ABTT Journal, *Sightline*, and to revise the 1968 edition of his book.

As everyone will know who is not totally new to the author, the subject of the book is really the lighting equipment. Lighting design, although dealt with at some length, remains a beginner's guide to theory rather than a practical account. The Art that F.P.B. understands best is the art of getting things done, so, being employed by Strand Electric to solve the multitude of engineering problems brought to them by theatre people, any early wish to go out and light for himself was soon stifled by the experiment, research

and invention needed to give other artists the improved and sometimes revolutionary new equipment they learned to expect. Thus, although the book contains many references to how "we" (F.P.B. himself, and usually "B" Bear and Paul Weston) lit this exhibition and that west-end success, these are references to the 1930s, and practical techniques for lighting in the post-war Pilbrow era are reported at second hand. However, the author's long experience of lecturing about stage lighting to amateurs (another of the traditional and self-imposed services that Strand gave to the industry) does result in two chapters dealing with Illumination of the Stage, and Painting with Light, that should well and truly launch a beginner. (Certainly they have a lot more useful advice than I remembered when reviewing Francis Reid's book in the last TABS which led me, on the irrelevant evidence of my copy of his earlier 1950 work, to accuse F.P.B. of virtually avoiding the problem.)

An interesting point in these chapters is the use of virtually free-hand margin sketches using CIE lighting symbols that the author helped to devise, for their proper use for making points of principle without irrelevant practical detail. But both chapters are exact reprints of the earlier edition even to repetition of a reference to the long defunct Strand fittings hire service.

Lighting Procedure is the title of the other chapter concerned with actually lighting the stage. Again, it hardly differs from the 1968 version even though custom and practice have moved onward since it was first written. In 1968 the idea that a text-book on stage lighting should include a discussion of the designer's responsibility for efficient pre-planning and use of rehearsal time was something of an innovation. Nowadays this is a well recognised factor in the success of the new breed of freelance and staff lighting designer and the author's thoughts on the subject seem rather elementary beside those expressed by, for example, Pilbrow and Francis Reid.

The author is at his most interesting when writing about subjects where his knowledge of detail or independent viewpoint are allowed free rein. Two chapters, The Development of Stage Lighting, and Auditorium and Stage show these two facets. In the former his incomparable experience makes for a highly instructive review of the technical milestones from lime-light to HMI and from gas plate to thyristor. Minor additions have been made to link with the up-to-date chapters describing the present state of the art. In Auditorium and Stage the author describes, often with passion, the recent history of theatre design and comments in new paragraphs on the wave of new buildings and conversions that

have been completed in recent years. It must surely be well known that F.P.B. has a strong dislike of adaptable theatres and a lasting suspicion of theatre-in-the-round and thrust stage. However, such opinions are widely held and the reasons are well argued here. The other point in this chapter, that bigger is not necessarily better, will be received by most with increased gratitude as the national purse strings tighten even further.

On the subject of lighting equipment itself, the book is deliberately not very thorough. Luminaires, lanterns, instruments or what you will, are illustrated on various pages but only dealt with methodically in the chapters Equipment in Common Use, and Optical Projection. The latter gives a good survey of possibilities and achievements, including new paragraphs dealing with modern extra-powerful projectors and with multi-screen technique. Equipment in Common Use should, however, be re-titled These You Have Loved, for most of the text and 12 out of the 13 illustrations deal with items now seen most frequently in museums or on a scrap heap.

Colour Music, alas, has been relegated to an Appendix.

To complete the list of the 11 out of 14 chapters that remain substantially unchanged, there are excellent technical explanations of the fundamentals of light, lamps, colour and electricity. These should be intelligible to any school leaver and bridge the gap between the theory of O-level science and the practice of stage lighting. Since the basic science has not changed, there is no need for revision here except, perhaps, that lamp technology has achieved a lot lately. Although the author has now clearly forgiven his old enemies for denying him the lamps he insisted were possible and necessary in the '30s, '40s and '50s, the revision he has incorporated still implies that, with a bit more effort, things could be better still. Understandably, the chapter on electricity avoids any attempt to explain how computer logic control systems work.

The parts of the book already outlined are together worth the cost of buying this book for the first time, but not, perhaps, if you already own the first edition. For two groups of connoisseurs however, there are two new chapters that might themselves justify adding this edition to the earlier on your bookshelf: the new chapter 1—Setting the Scene, and the new chapter 8—Lighting Control.

I myself especially welcome chapter 8 because, for many years, I have enjoyed being a part of the dialogue that revealed new problems for F.P.B. and his colleagues and competitors to solve. Lighting control for theatre and television has been studied in Britain with great thoroughness since 1950. The results are now spread around the world embodied in one-off and short run production items that have done a lot to help our balance of payments. But, unlike university research and many other

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THE ART OF STAGE LIGHTING  
Frederick Bentham  
Second Edition Pitman Publishing  
39 Parker Street, London, WC2B 5BP

branches of industry, there is no tradition of publishing this knowledge to ensure progress and to claim due credit. So, again and again, subtle or even elementary mistakes are repeated as newcomers leap into a field they mistakenly think to be still in the stone age. The sufferers are the users, the still unorganised band of theatre console operators who have to learn yet another new set of control names, ground rules and pitfalls. F.P.B. is the only man who, so far, has made any attempt to alter this state of affairs and yet, in my view, he himself very often gets things wrong. TABS, as I have already emphasised, is the main, almost the only worldwide vehicle for a continuing discussion on this subject. But, naturally, it has never been available to rivals of Strand. So the F.P.B. view has, to many, become uncontested doctrine. Now, in this edition of the book, he is able to make some amends. No longer employed by Rank Strand, the achievements of rivals can be noticed more frequently than before and an informed reader can see that there is sincere recognition that others have made valid contributions to the art. However, I do not think that F.P.B. has yet gone far enough in acknowledging the real step forward made by Tony Isaacs at Thorn when he designed the first Q-File to couple the electronic dimmer to the fixed separate stage and preset store concept with one-way matching cross-fades. This idea is now fundamental to the majority of first-class systems from many manufacturers. F.P.B. himself may recognise that this was a simple extension of his own electromechanical System CD, but it would be fitting if he now set himself to really study\* and report on the whole range of advanced control systems that have achieved established and widespread use. Thus the next revision of this chapter, perhaps about eight years on, could give a really impartial survey of how the important and lasting ideas in stage lighting control should be attributed.

Chapter 1 is for connoisseurs of F.P.B. style. In it, he looks at the problems facing British theatre today. The new playhouse designs, much discussed, but barely begun at the time of the first edition, are now practical fact even if not yet well enough understood to prevent unwitting repetition of mistakes. The State now finances most professional theatre and London has a growing number of big repertoire houses. Should the search for perfection still continue, or should the discipline of circumstance be our new ideal? This is my interpretation of what chapter 1 is about. F.P.B., of course, puts it much better and, for once, does not draw a conclusion.

In the last few paragraphs I have treated this book as being an advanced work for specialists. It is not, nor does it pretend to be. It is a thorough, authoritative, well illustrated explanation of all the technical aspects of stage lighting taken to a level that any practising technician should expect to achieve. Of great value is that the style is eminently readable and every point is embellished by anecdote or provocative, humorous, sincere, prejudiced or concerned

\*In several parts of this chapter it seems that F.P.B. does not really understand rival products.

opinion, in every combination. The new printing is on better paper and the photos and new layout giving opportunity for margin notes are also improvements. Owners of the first edition should get a good look at this revision and should seriously consider whether they can afford not to buy. Anyone seriously interested in stage lighting and who has not yet got a copy of either edition should buy now while stocks last.

BOB ANDERSON

#### BAUTEN DER KULTUR

Published by the Institut für Kulturbauten,  
105 Clara-Zetkin-Strasse, Berlin 108, DDR.

Welcome to a new magazine launched with a single issue in 1976 but intended to be developed into a Quarterly. Berlin's Institute for Cultural Building is the National Theatre Consultancy of the German Democratic Republic and has responsibility for housing the performing arts from conceptual brief to detailed technological specification. The magazine contains articles on schemes which indicate the wide range of the Institute's work: the refurbishing of older theatres such as the Dresden Semperoper and the Berlin Deutsche Theater; the building of new complexes such as the Stadthalle in Karl-Marx-Stadt and Berlin's adaptable Palast Der Republik (with an adaptable ceiling which makes all previous ceilings seem like stone-age engineering); and the new Jugendklubs with integrated spaces for recreation and creative leisure. *Bauten Der Kultur* is a journal to go on the shelf alongside *Buhntechnische Rundschau*, *USITT Journal*, *Sightline*, and *TABS*. Welcome.

#### SIMON'S DIRECTORY OF THEATRICAL MATERIALS, SERVICES AND INFORMATION

5th Edition. Published by Package Publicity Services Inc. 1501 Broadway, New York, N.Y. 10036.

Readers of *Sightline* will have noted that the Association of British Theatre Technicians have been beating their collective brow over the problem of information retrieval. Perhaps the problem is that there is no British equivalent of North America's *Simon*. *Simon's Directory* describes itself as a classified guide of where to buy, to rent, to lease, and to find out. The number of entries is quite staggering. Architects, Boas, Conferences, Dollies, Engrossers, Fountains, Gobos, Hemp, Instruction, Jugglers, Kaleidoscopes, Lumber, Movies, Newsletters, Organisations, Pulleys, Risers, Strobes, Teasers, Unions, Velours, Wagons: its all there. Mr. Simon is only defeated by X, Y, Z and Q. All this information would be useless if it were not easily retrievable: *Simon* does this by detailed indexing. So you want a balloon? Well, is it a balloon, ascending (see aerial advertising) or a Balloon, imprinted (see advertising specialities) or perhaps just a balloon, large for parades (see props). Anything missing? ... well there are 204 theatrical periodicals listed, but no mention of *TABS*.

# Tabman's Australian Diary

#### The going ...

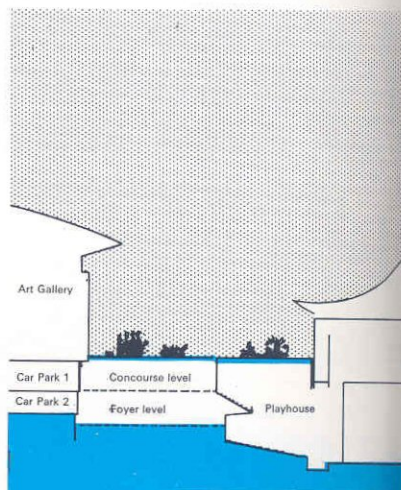
Enjoying, by courtesy of an airline with hydraulic malfunction, a rather pleasant dinner on the Graecian coast. Suddenly a violent storm arises and just as suddenly is gone. Suddenly, very suddenly: quicker than any of the maestro-operators could have wheeled a grandmaster. Resolve to be more sympathetic to all those composers of classical mythology operas who wash their tenors ashore with instant storms.

#### ... and the coming back

The stunning feature of night light in Hong Kong is not just the extent and the brightness. It is that the light is absolutely still. Not a flasher, not a flicker, not a tracer. Very dramatic. Like the Arts Centre that architect Tao Hao is building on an incredibly tight waterfront site. Getting a main theatre, experimental theatre, recital hall, rehearsal room, exhibition gallery, restaurant and seven floors of studios on to such a restricted site raises problems of audience flow. Clambering about the concrete in my hard hat, I gained a distinct impression that the problems have been solved—very neatly. Clearly a building to feature in *TABS*, in due course.

#### Tabman Talking

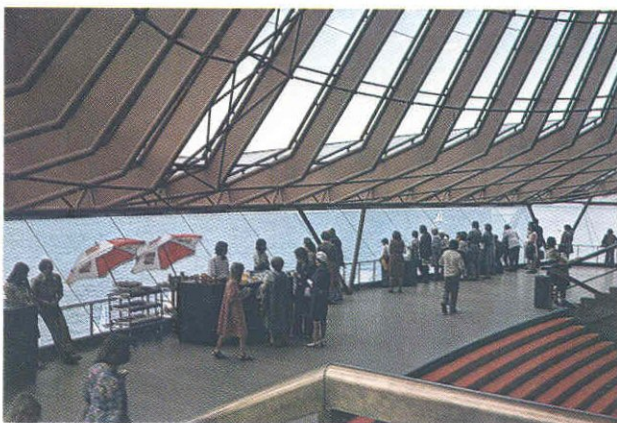
Just failed to score a century. But 98 hours of lecturing in the 15 working days of a three-week three-city tour must surely rate as something of an honourable near-miss. (And the 98 is computed with impeccable



honesty: every coffee-break rigidly excluded from the calculation.) Audiences super-friendly, enthusiastic and participating: so all much enjoyed by a Tabman who would now like to record a formal vote of thanks to all those who organised the continuous lubrication of his vocal cords.

### Sail-shells mobile

Sydney Opera House is a delight to look at and look from. It is a maritime theatre—no, *she* is a maritime theatre for Sydney Opera House is a ship and her sail-shells can only be fully enjoyed from the floating mobility of a harbour ferry. And from the foyers, bars, restaurants and circulation areas (including the Green Room) the harbour—its water, its sky and its shipping—are omnipresent.



### Gauzed thrust

Only Bellini or Donizetti could have done anything for the Duchess of Malfi and they did not. Nimrod set the play inside and outside a gauzed box with sliding sides. I cannot say whether this catalysed the Duchess because I arrived late (an impromptu theatre conference in a house of public refreshment) and departed early (Oh, Australia, your steaks, your sea-foods your vintages!). But I sat long enough—in a side-back rather than my allotted centre-front—to be convinced that actors can be

placed inside a gauze box-set on a thrust stage without impairing audience contact. Which must be quite a tribute to the architect. And to the actors.

### Designing NIDA

Encouraging student design exhibition at Sydney's National Institute of Dramatic Art. Evidence of ability not just to control texture and paint but to design practical sets that handle, mask and light. It was Mark Wager's *Epitome of Romantic Realism* that really set my gels a-tingling. Come back paints and prosceniums, all is forgiven.

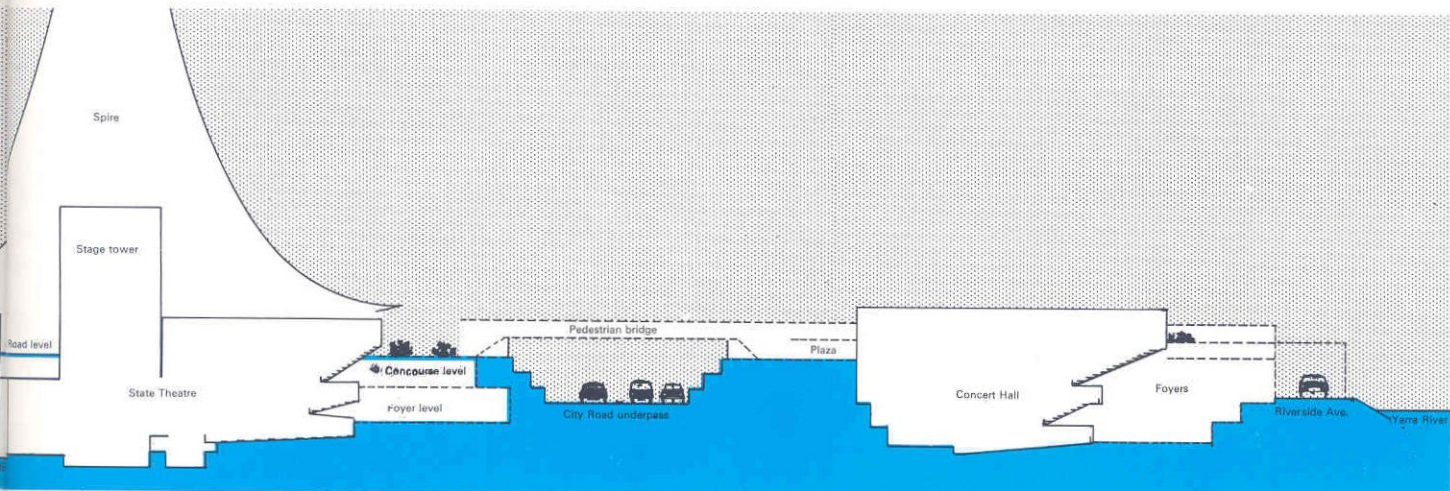
### Arts underground

It is not just the answers of the building team

or the encouraging air of quiet elegance in their site offices that promotes confidence in the Victorian Arts Centre. It is certainly nothing to do with the three theatre auditoria being substantially underground, topped by a 140 m spire. I just cannot put a logical finger on it, but my gut-feeling is that this project has everything going for it. Perhaps it is that they have got the proportions right without obvious compromise. Anyroad, I have started collecting pennies in a redundant demijohn to raise the fare for a look-see on completion in 1987.

### Sound light settling

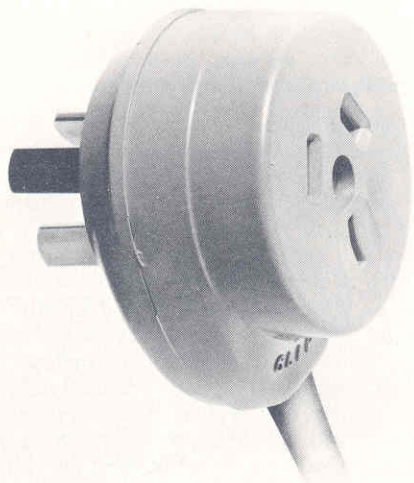
A short 300-mile drive up country from Melbourne is the pioneer settlement of *Swan Hill* on the Murray River. It takes more than the promise of a Sound and Light Show, even in such a romantic spot, to raise a gleam in a Tabman's oculars . . . but just try an offer of dining aboard the Paddle Steamer *Gem* on Wichetty Grub Soup and Squatter's Special (now, whereas all TABS readers will know what a wichetty grub is, perhaps I should explain that Squatter's Special is Eye fillet stuffed with Yabbie Tail, served on damper with a creamed Oyster Sauce). Suitably wine'd, but before tackling the Plum Pudding, I was led ashore, seated on a sort of motorised cart and driven gently off into the night. And suddenly there was pure theatrical magic. Speech to describe, sounds to evoke and light to reveal the early settlement life. Each building cross-fading



into life as we drove slowly past with eyes alight. And now and then a tear—of emotion rather than grief.

### Bush engineering

Next morning I investigated the mechanics of Denis Irving's light design: the Patt. 123s concealed up in the trees and down in the kennels, the camouflaged dimmer racks and coordinating printed circuitry—all designed to function for a long long time without so much as a tickle from the service engineer's digital oil can. As in all museums it is the ephemera that breathe life and it is the small details of the daily round, some imported, others improvised, that orchestrate the picture at Swan Hill. Yet there is nothing ephemeral about the Nineteenth century machinery which, whether animal or steam driven, still chugs away. In their engineering the Australian settlers showed an ingenuity only matched by that of the stage switchboard pioneers. There was, and thankfully still is, a lot of bush engineering in theatres around the world.



### Pickaback pairing

I envy the Australians their *pickaback plug* which simplifies patching and pairing. Most theatres have very neat patch panels based on this simple domestic plug with a repeat socket set into its back. Sometimes called hermaphrodite by its fellow connectors.

### Theatre print

And now for a provocative statement. Australia probably has the highest overall standard of programme text and graphics in the English-speaking world. Supporting literature, even annual financial reports, is stylishly presented. Central Europe, with its traditions of dramaturgy, has long understood the importance of *print* in helping to establish and project a theatre's image. Aussies obviously understand—of what about it, Poms and Yanks?

### Street Theatre

The flight path to Adelaide passes directly over the Festival Centre and a low approach in a Piper Navajo gives a spectacular introduction to Theatre and City. Theatre shapes and theatre landscaping so stunning that I failed to notice intensive colourful activity in a long pedestrian street of otherwise Sunday-quiet town centre. Twenty minutes later I attempt a lamp post climb to get a sightline to one of the many street theatre groups sharing an enthusiastically participating audience. The imaginative lighting was beautifully designed by Adelaide Sunshine.



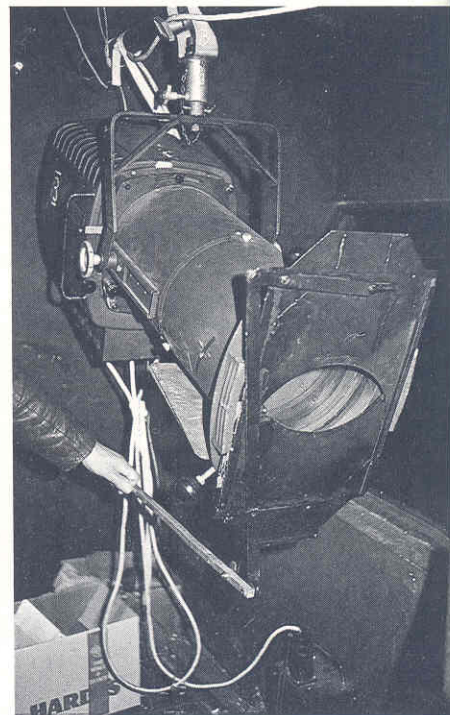
### Lighting Eclipsed

For the outstanding lighting event of the year, I had rather a good seat. While the false sunset and dawn of a total eclipse brought some confusion to Australian fauna, I was flying into the eye of the sun. The best cue was the effect of night to port and day to starboard.

### Space shapes

A couple of years ago this diary recorded a dogmatic but sincerely held generalisation that experimental theatre spaces seem to arise more successfully from conversions than from blank paper. Sitting in Adelaide's new austere studio (so clinical that I felt obliged to tread softly softly) I found nothing but reinforcement of this view. I even

developed a fresh prejudice—experimental space must not be square: it must be at least rectangular, and probably asymmetric. Probably wildly asymmetric.



### Discharge fading

Discharge lamps, such as CSI, cannot be faded electrically. Melvin Conder of Her Majesty's in Sydney devised this interesting mechanical shutter to fade their Patt. 765 follow spots.

### Some Pleasures

The wine ... The cast-iron ... The Melbourne Princess ... The steaks ... The Old Tote's *Season at Sarsaparilla* ... The cellars at Hi-Watt Lighting ... Jude Kuring in *And Miss Reardon Drinks a Little* ... The Barbecues ... The Olde Tote's *Toast to Melba* ... Melbourne's tramcars ... The Wines ...

A Rank Strand Patt. 23N enjoying the sunshine outside the Dragonara Hotel in Malta.

