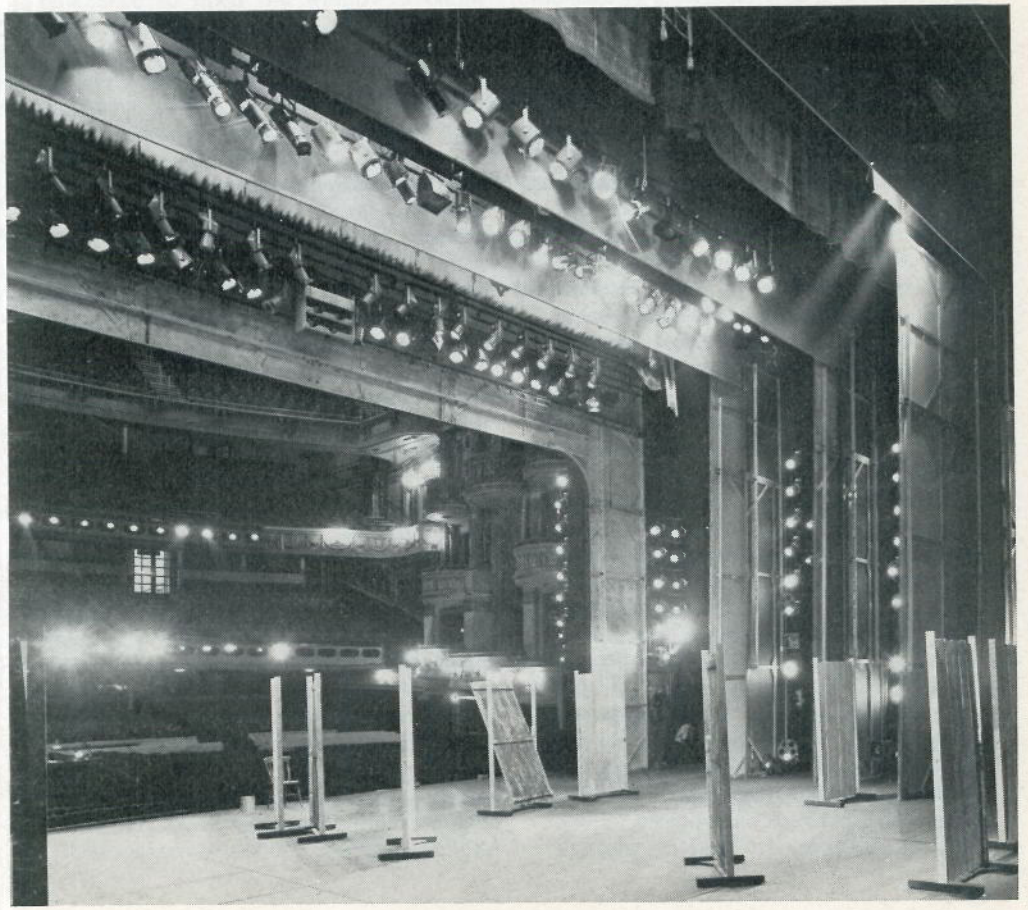
TABS

June 1972 Vol. 30 No. 2



TABS

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Cover Picture: Theatre Royal, Drury Lane.
Joe Layton's stage musical of Gone with the Wind.
Lighting by Richard Pilbrow.

Shut that door!

We were questioning a member of an opera audience recently as to how she liked the performance of *Bohème*. She and her husband are not regular opera goers but are gradually making themselves acquainted with the repertoire. The thing that worried them most was the blessed door to Rudoph's attic. The first thing that occurs to one on a cold day is to keep the door shut. We in this country especially have every reason to know that—what with the miners' strike, power cuts and all the rest. Keep that door shut in Winter is the rule. In Paris also we happen to know, it can be infernally cold at times. The draughts there would come all the way from the Steppes and up all them steps into the attic. A reluctance to open the window a chink even in high summer is a well known French characteristic. So *Fermez la porte* probably preceded by a *Mon Dieu* or two would have been the *bon mot* at any time but with a *petite main glacé* around would have been an absolute must.

There was a door to that *Bohème* attic—our visitors were lucky—the set was quite recognisable, but the cast did not shut the bloody door. It was quite otherwise when our pair went to "Cav and Pag". First of all, the set—a giant ramp—looked more like one of those Steppes than the square of a Sicilian village; except that, rather uncharacteristically for the Siberian outback, it was draped down either side with black legs. Perhaps after the nasty experience with Bohèmean doors this opera house was playing safe; minus doors and windows—they could not go wrong—or couldn't they! In due course the sun came up over the village which wasn't there and clouds appeared on the cyclorama. Clouds? you ask. Well so they were interpreted.

It is time for Easter Mass, so *exeunt* left nearly *omnes* to a suitably *lento* speed limit. Now our pair in the audience knew, like everyone knows, that a church—even one of those twenty-one candle power Roman Catholic ones—is by day a relatively dark place. Conceive of their surprise when the *exeunt* was into bright light. The symbolic lure of the Holy Mother Church perhaps; but it didn't register that way, it registered like that door, as an oddity. The spell was broken—someone had put a foot, even if a non-naturalistic foot, wrong.

Now our pair were not dimwits—not gawping in their first theatre. They go to all kinds of theatre even if they have yet to catch up on opera. We suspect that these erroneous zones are not peculiar to opera.

In a naturalistic production, is the detailing right? While in the other kind of production are you sure that the audience will know what you are getting at? It is possible to be misunderstood—we in TABS should know that! The abstract, psychological or any other significant message of a cerebral type is all too prone to be significant only to its creator. The members of the audience, gazing vacantly, of their nature abhor a vacuum. Into this they thrust the first interpretation to come into their heads and this is almost bound to be the naturalistic one. Something programmed into their computer from birth.

We have an effect of clouds passing across the moon and *obscuring* it. Since two projected optical effects are used one upon the other, this cannot possibly happen—good though Rank Strand optical effects are. Nevertheless the audience jump to the conclusion that the clouds do pass over and do obscure the moon because this is naturally what they expect.

To return to opera: In that lovely Zeffirelli *Cavalleria* production in another place, there is a real fountain playing in the shadow of the church. There enters left a donkey and cart and on one occasion when we were in the audience the cart caught the fountain basin and shifted it to one side. The donkey and the cast—troupers all—went on playing their parts. So did the fountain, gradually forming a puddle on the floor, which grew and grew towards the footlights. Now members of the opera orchestra cannot see the stage but would know that there was a donkey up there—so what message did they get when finally the water trickled over into the pit . . . ?

Handing It Out

We recently read of a new theatre which "will be among the most modern and best equipped in the world". What on earth kind of theatre is that? Within the hour (or two) we were asked to describe our DDM lighting control—then just installed in another theatre—in but half-a-dozen words; anything else would be "too long for the press handout". And so it is that the press continues—even expects—to publish space-consuming clichés. Of course engineering and lighting, or even theatre design are not to everyone's reading taste but what object can these general-purpose phrases serve—equally applicable to a new hotel, a new garage or more specifically to a new kitchen—"among the most modern and best equipped in the world"? Instantly adaptable to advertising or editorial copy, such a statement is a tale told by an idiot, unsound and dreary, signifying nothing.

Other people talking shop—contrary to the belief of television producer or editor alike—provides fascinating conversation for a lot of us, but it is the detail that tells. One switchboard is much like another and all theatres are alike—just places for audiences and actors—until one gets down to detail, and detail needs time and space. There can be no shorthand here. Many a contributor to a TV discussion must have asked, "Is that really all they got me here for"? Many a newspaper reader must have wondered, "If my own speciality is so glibly reported . . . ?"

It is sad that our opening quotation came from the theatre's own beloved weekly—*The Stage*. They should have known better than to publish such press handout-ese in their precious column inches. Watch it—not even Rank Strand are above issuing non-information. Everything we make, according to some people here, is "the most modern" and made in a factory which is "among the best equipped in the world".

A Lighting Man for Lighting!

We of TABS have not on the whole been notable for devoting much if any mileage to management matters—regarding admin. as a necessity rather than a cause for joy. It is quite otherwise with the appointment of Wallace A. Russell to be General Manager to Strand Century Ltd. in Canada.

He was, of course, until recently General Manager of the National Ballet of Canada. During the last decade, he has played a leading role as stage facilities consultant for many of Canada's foremost performing arts buildings, including the National Arts Centre and the Grand Theatre, Quebec.

His work as a lighting designer is well known and this year he will be designing for the Canadian Opera Company's productions of Wagner's *Siegfreid* and Verdi's *Aida*.

Philip Rose will of course retain overall responsibility for both Century Strand and Strand Century in America.

Lines of communication!

Nearly one in a hundred of each issue of TABS finds its way back to us rubber stamped "unknown" or "gone away". We recognise the right of every man to go into hiding or to adopt this simple means of intimating that he does not want TABS any more. The plate is therefore removed and melted down, chucked into the wastepaper basket, sold in the antique market or whatever it is one does with old Addressograph plates. Unfortunately, nine times out of ten there follows, weeks, months or even years later a lamentation "I used to get TABS, but you stopped it for some reason", thereby implying meanness or censorship on our part. The answer is we did nothing of the sort, the fault dear Brutus is not in ourselves but in your lines of communication. Therefore *please notify us here of change of address* and put no reliance on the G.P.O. to forward. Plates are filed geographically so please give your old address as well.

Of Mice and Men

Michael Northen

Twenty-one years ago in 1951, two major events happened in the world of the British theatre. *The Mousetrap* was produced at the Ambassadors Theatre, and Strand Electric launched a major re-think and re-design of all their equipment. Strand Electric had just bought out the revolutionary Patt. 23, and the Electronic switchboard, the forerunner of a vast selection of new and highly complicated forms of control. Each was then to go its own separate and happy and successful way, without either ever meeting up.

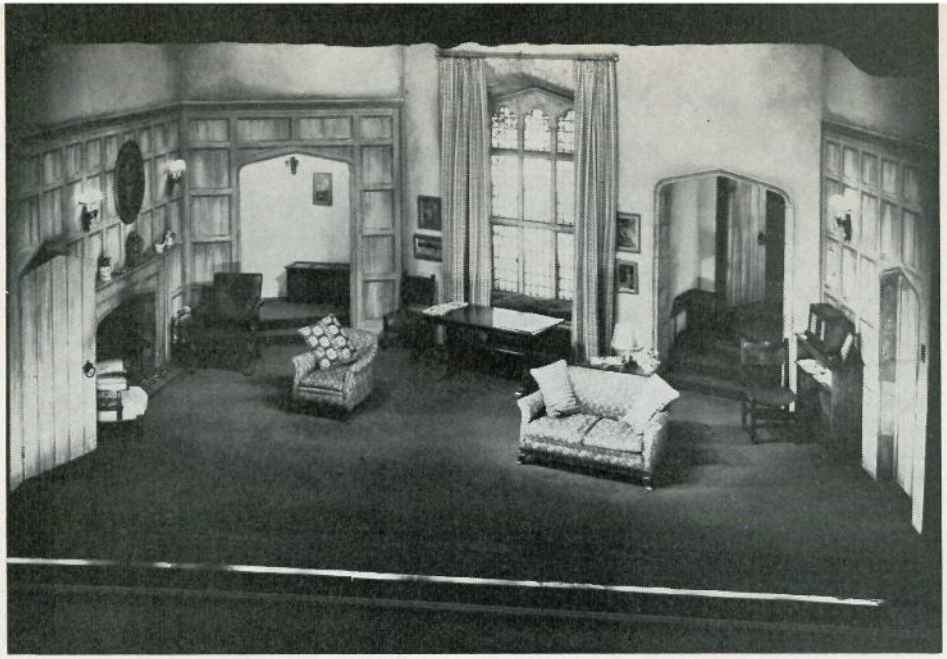
The Mousetrap had inherited the equipment installed in the theatre which had been in use already a number of years, and it didn't seem necessary to either change or add to it. The formal layout was exactly as used in those days for the majority of straight play productions, and had been used in this way for a number of years. There was no earthly reason for changing this pattern—after all even lighting designers hadn't been thought of!

It was not until I was invited in 1961 by Peter Saunders to re-light the production that any new equipment was introduced or indeed any changes were made. I went along to the theatre to see the play for the first time, and it was quite extraordinary to find how few of the modern techniques of production had affected this particular play, both from the lighting and the scenery points of view. The set was entirely realistically painted—no three-dimensional mouldings were employed, even the up and down flats representing panelled walls were painted. Of course it was well painted, by artists who knew the art of providing shadows in the correct places, but the flood lighting did not help, especially in such a very small and intimate theatre where the audience is so close to the stage.

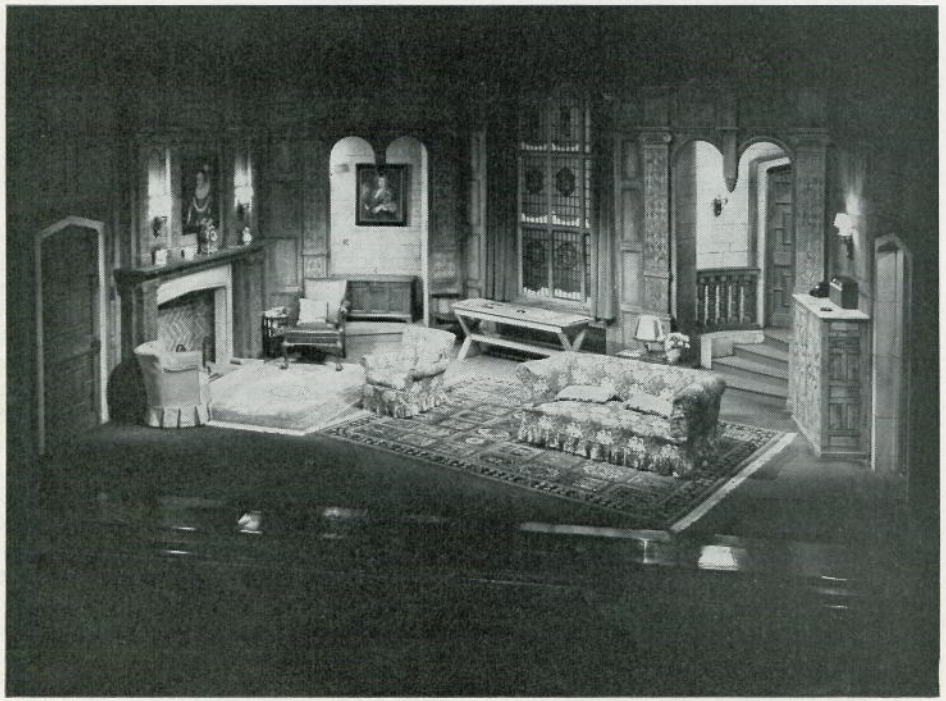
The technical details were of great interest. The spot bar was not used as now, as the main sources of light, but only to highlight certain areas, such as the sofa, chair and entrances, etc. It consisted of twelve Patt. 43s* with a light batten above it. This batten and the floats were the main source of light and were used at full for most of the production. Behind the doors, hall entrance, and staircase, were "lengths". For those who have never seen them they consist of naked lamps screwed on a board in a row and hung on a rail behind the flat. The front-of-house lighting in those days was not considered very useful and consequently the majority of theatres had very little equipment hanging in front of the proscenium arch. This was so at the Ambassadors Theatre and unfortunately is still the position at this particular theatre. All that existed in front were two very old Patt. 43s housed in a cage on the front of the dress circle. However, there were two extra lamps—both Patt. 43s—hung in the boxes either side of the stage. Unfortunately, they were nearly obscured by the drapes hung in front of them, and anyhow the angle was so acute that they only covered the downstage area of the stage. The big window at the back of the set was lit by only two Patt. 49 1,000 W floods on stands which lit a plain white cloth, above which hung a snow bag. The distance from the window to the cloth is only about 5 ft. and, with the added joy of having a wind machine taking up most of the room, it must have been extremely difficult to get any light onto the cloth at all. The Grand-Master board is situated on the prompt side perch and three men are needed to work the show even now. Owing to the necessity of having a complete blackout the board is completely covered in and the operators are unable to see anything of the stage at all. This board is still in operation, and I dread to think how much money would have been saved if one of the modern type boards requiring only one operator had been installed even ten years ago.

The first thing I did, was to introduce

**Patt. 43; 1,000-watt Focus lantern with a 6-in. diam. by 10-in. focus plano-convex lens.*



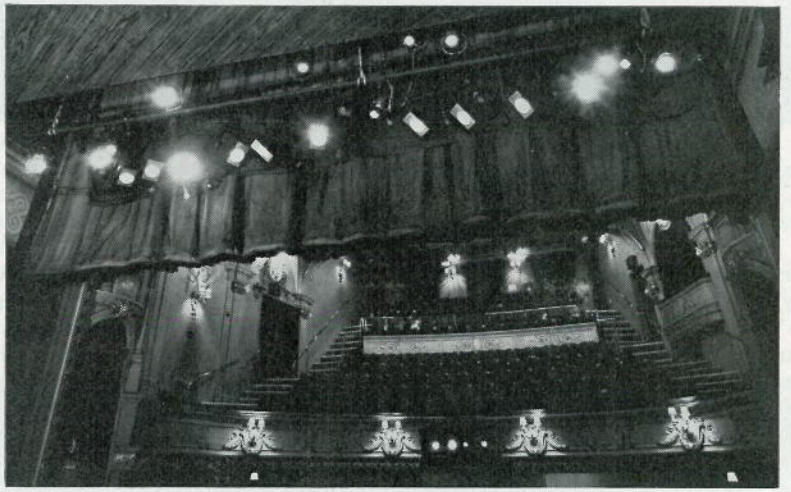
The Mousetrap, *Ambassadors Theatre, London.*
(Above) The original set designed by Roger Furse.
(Below) The present set designed by Michael Holland with lighting by Michael Northen.
(Opposite) The present spot batten dominated by the Patt. 43s and other items.



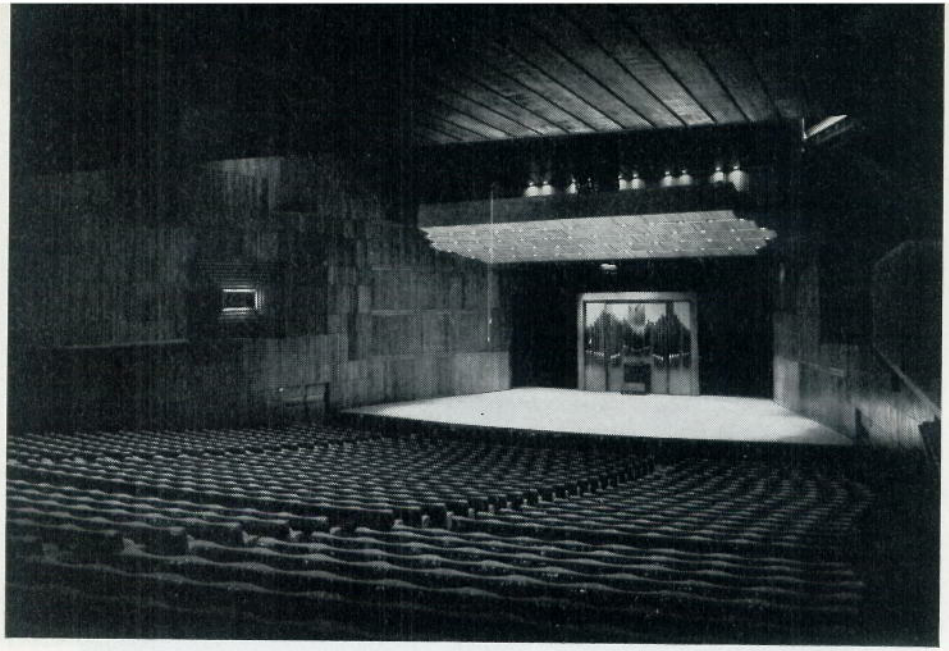
Patt. 23s. I managed to squeeze five Patt. 23s between the Patt. 43s on the spot bar, as there was no room for a second bar to be hung. I was lucky to find under the stage a very old "Acting Area",† which was also added to the bar to give me an effect I was after. The Patt. 43s were then taken down and given a complete overhaul. The old Patt. 43s were also taken down from the dress circle and two pairs of 23s were substituted. Two extra Patt. 49s were squeezed into the window area, although the snow bag and the wind machine remained. The No. 1 spot bar was re-set and re-coloured, and the batten removed. So, as each year goes by, with each change of cast, a few extra lamps are brought in.

Three years ago, I lit a production at the Strand Theatre of *The Others*. The opening scene had a terrific blinding snow storm, using four cloud effects and four snow effects all out of focus projected onto the cloth outside a vast window. Mr. Saunders saw the production, and rang me asking for the same effects to be reproduced at the Ambassadors Theatre! So out went the snow bag and the three projectors were installed. Finding space to fit them in was a nightmare—eventually one was placed in the flys and two more effects were put on stands beside the four Patt. 49 floods. These extra lamps appearing did not help the wind machine operator in such a restricted area.

During the past year, I have been slowly getting rid of the old Patt. 43s from the spot bar. This has come about really because the Vaudeville, which is owned by Mr. Saunders, has recently had a major facelift, with a new board and a vast amount of new equipment installed. There is now so much light available at the Vaudeville that after seeing *Move Over Mrs. Markham* and then going to the yearly dress rehearsal of *The Mousetrap*, Mr. Saunders agreed that the old 43s should gradually be phased out and be replaced with paired Patt. 23s. This process is taking some time but we have now eliminated three of the twelve 43s and we have six paired 23s in their place. Unfortunately, little can be done with the front-of-house. This is a major problem; there are no circuits or positions available without re-wiring and so the four Patt. 23s will have to remain for a few years to come. So Rank Strand will continue for many years to come, developing and producing fine equipment to be installed in the modern new theatres that are springing up all over the country while the audiences at the Ambassadors will still continue to pile in quite oblivious and unconcerned whether old or new equipment is providing the light for them to see *The Mousetrap*.



†Narrow angle vertical flood of 1,000 watts.



The Lisbon Connection

The name Gulbenkian appears on a number of University Theatres in Britain but nowhere is it more worthily or appropriately evoked than by the building in Lisbon itself. At one end there is a museum in which are housed and displayed in a unique manner the treasures collected in the lifetime of the late Calouste Gulbenkian. Beyond saying that many of these exhibits are illuminated by Rank Strand Minispots we pass on to the Concert Hall and Conference Centre.

As is not unusual with concert halls there was a sudden change of plan very late in the day and it was decided that this one had to take ballet and other stage productions. Advice was hastily sought from Ian Albery and Richard Pilbrow, but since this complex expresses itself externally as a long low building, anything like a fly tower was out of the question. The answer was to provide this in reverse, so to speak, by excavating to great depth below.

One lift carries the 31 ft. high cyclorama and its lighting, complete with masking border. On top of this is a further 5 ft., carrying a fixed section and housing two lifts. The whole lot can sink so that its top either presents a flat stage floor or may form steps at the rear. Downstage of this, three large lifts, which rise above or sink below the stage, can provide further steps. The whole allows an entirely flat stage or any combination up to six steps above stage level for orchestra or choir or for production purposes.

Right downstage there is a fixed flat stage level, the audience side of which has a further lift which can be used either as an extension to the stage itself or as a sunken orchestra pit—or even be dropped right down to a loading position. In the downstage area there is a special lift which carries the teaching wall, i.e. lecture screen, etc. The wide screen for cinema proper is upstage of the cyclorama—also on a lift—which carries both screen and horns. Beyond this is an organ lift which takes the console, pipes and all, down to the basement. Finally one comes to the back wall of the stage which consists entirely of two vast sheets of glass, well separated to give complete sound insulation.

The gardens beyond this great picture window provide an animated backdrop—real scenery. Indeed, the term scenery is more than appropriate since these gardens—complete with their lake and swans—are capably man landscaped and planted. Beautiful and natural as they are, these living things were placed with just as much care as any designer might employ in disposing of his plastic and stainless steel tubes on a more orthodox stage.

This *trompe d'oeil* is not limited to daytime, special garden lighting being provided from an SP/80 3-preset switchboard which is also used for the outdoor theatre. The six masters of the SP are repeated on the main concert hall control system. Thus the main operator has control of both internal and external lighting and it only remains to get the swans to perform on cue.

The idea of bringing the gardens into the building in this way is extended into the museum itself where vistas are opened up from time to time as an actual part of the lovely objects to be seen therein.

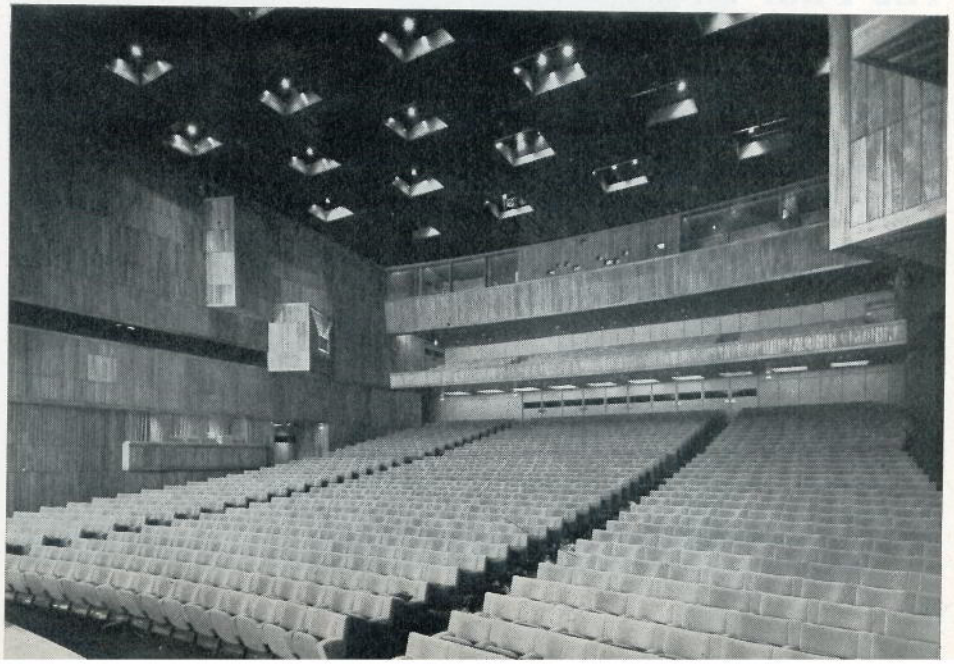
A feature of the equipment above the stage is that it is all neatly masked. For instance, the track for the curtain immediately in front of the first glass wall is mounted in a slot in the ceiling. The special stage lighting is mounted in flaps which swing down to form borders. For concert lighting, Patt. 123s (seen in the photograph as bright dots) are mounted behind individual apertures.

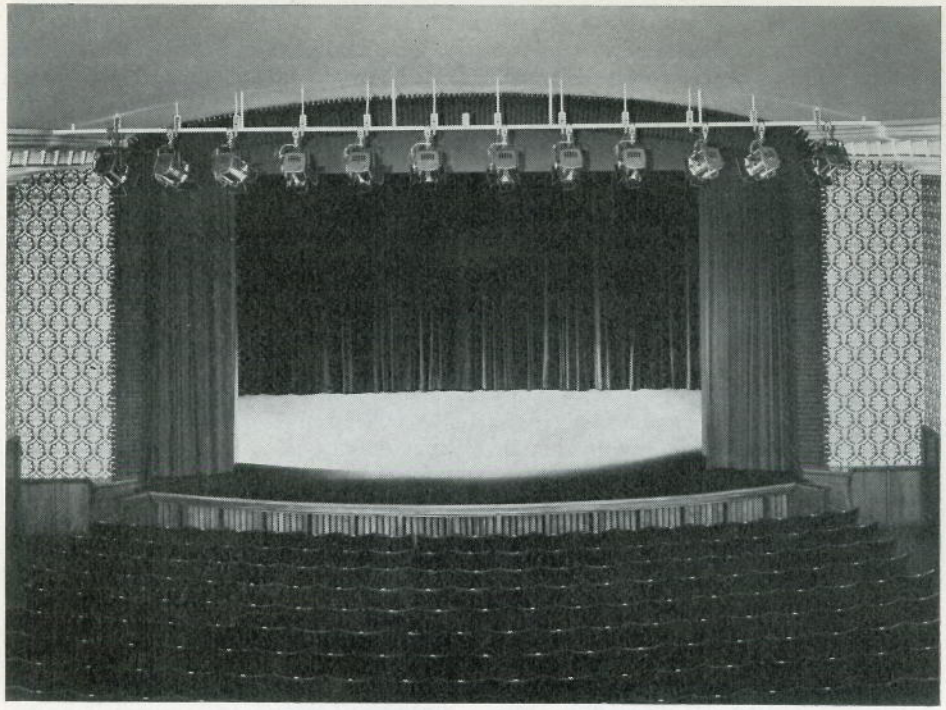
To provide off-stage space on either side of the stage the wooden panelling in the photograph pivots to form wings. Lighting positions in the main ceiling are exposed by motorised traps operated from the lighting control room at the back of the balcony—the lighting itself being controlled by a 3-preset LP 140.

It is usually a feature of palatial buildings that the "offices" to make them work do not measure up to the rest. In the case of this complex one can only say that the public really miss something in not visiting the boiler rooms, the ventilation and air conditioning plant rooms, and the other equipment rooms. As to the staff areas, canteen and dressing rooms, as one of them put it to our man in Lisböa, "After working and lunching here, it is a let-down to go home."

The design of the Gulbenkian Centre was in the hands of a team of architects and consultants under the direction of Engineer Luis de Guimarães Lobato.

The stage lift installation is by Hall Stage Equipment of London and the Rank Strand equipment was supplied through Máquinas de Precisão, S.A.R.L., Lisbon.





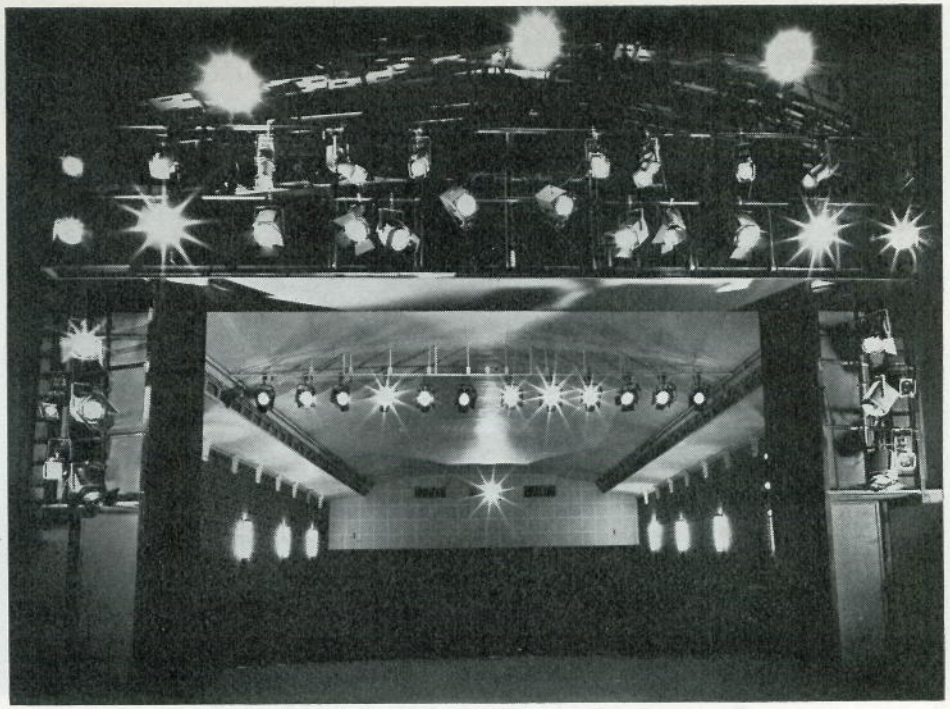
The Paul Thöne Hall Gütersloh

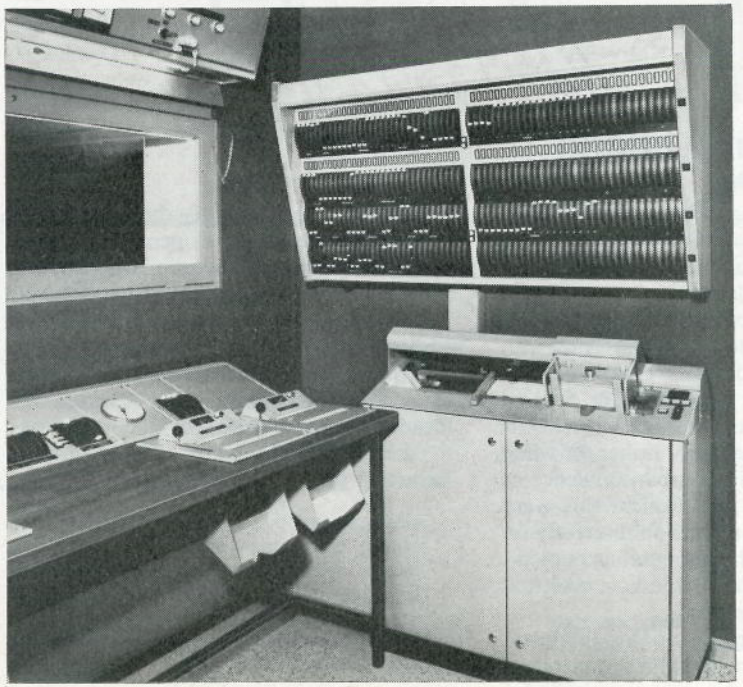
Built at the beginning of the century as a public assembly hall the Paul Thöne Hall was used for the various community functions of the day. It was later converted to a cinema. Now the need for a wider choice of entertainment in the area has resulted in still another transformation. Remodelled as a multi-purpose hall it will function mainly as a theatre. Strong support from a nucleus of season ticket holders and a lively public interest in the arts form the basis on which a greatly varied programme is presented, including visiting companies from town and county theatres and concerts promoted by international agencies.

In addition an unusually large foyer provides a suitable setting for exhibitions of painting and sculpture put on by the City Council. In equipping the theatre and stage major architectural alterations were not possible, consequently much of the stage lighting has had to be installed in full view of the audience.

Because of unwanted light spill from the low voltage spots* only profile and Fresnel spots with barn doors have been chosen. The problem of access has been solved by fitting pole operated versions. The lighting control is housed in the former projection room. This is a system Memocard. The master desk with three card readers (two only show on the photograph) is on the left under the window. The two manual presets for setting or modification of lighting is on the right hand wall above the automatic card punch.

** A reference to the Nedervolt beamlights commonly used in Germany.*





America in London

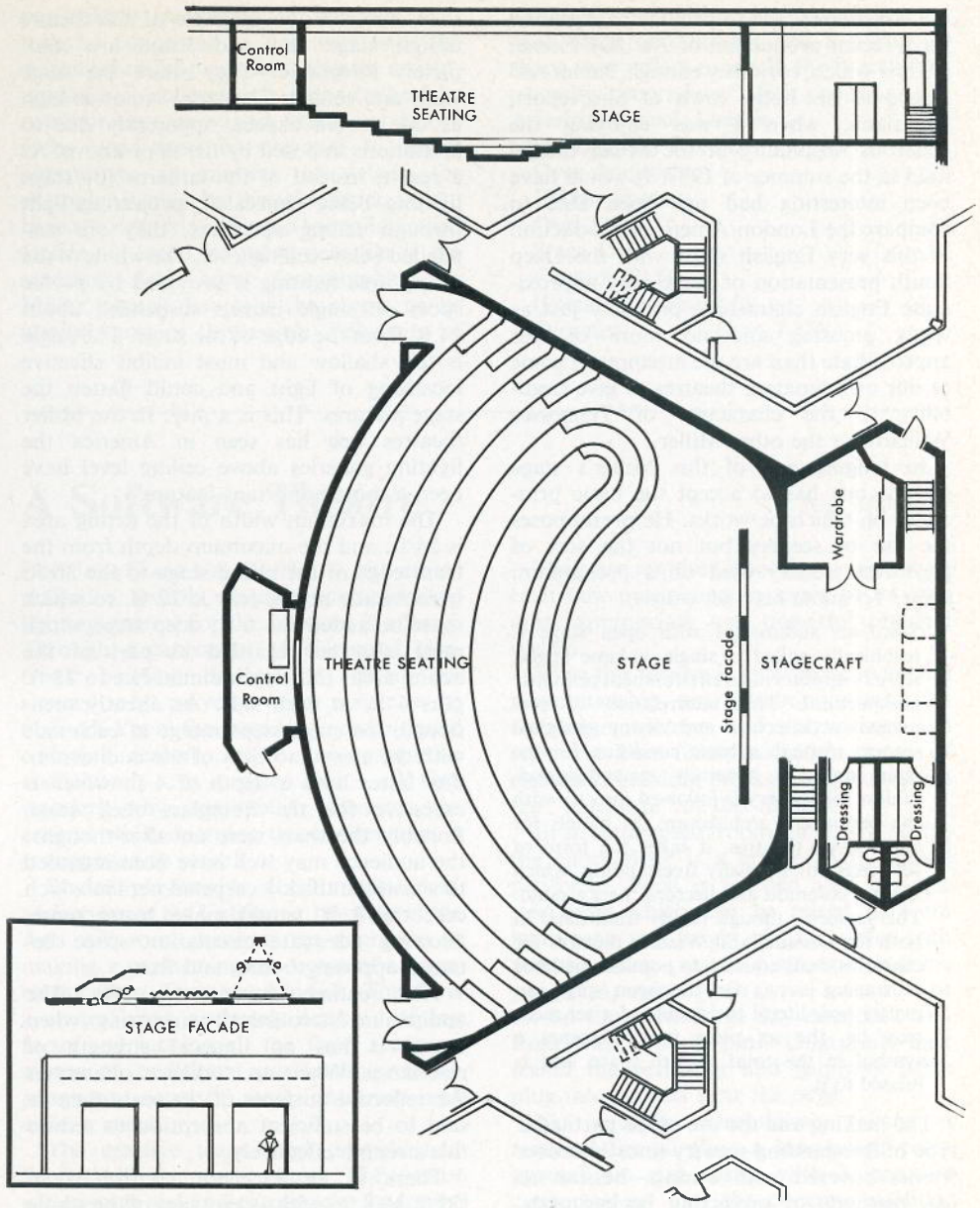
Percy Corry

It may be something of a surprise to learn that the number of American families living in London has made it necessary to provide accommodation for the appropriate education of 1,500 juvenile and adolescent expatriates. The new American School in London does so, creating in the process hexagonal corners of a foreign field that are forever America. "Field" is probably straining imagery rather far when it means the mellow suburban opulence of St. John's Wood into which this very interesting building merges so discreetly on the west side, and the anonymous contemporary block of flats to the east which it ignores equally discreetly.

The school theatre, in one of the hexagons, has the unmistakable imprint of James Hull Miller who was consultant for the job. Those who are familiar with his unorthodox designs for open stages (there are more than 80 of them in America) will recognise this as being one of his "Arcade Type concepts". The stage has the typical Miller front of sweeping curves with steps that merge into the risers of the seating terraces. At the rear of the stage is the façade of three arches provided, according to the published gospel of the prophet James, so that

> simple scenic panels can be inserted in the arcade embrasures as well as translucent panels for background projection with floor based equipment to the rear.

When the school was visited during the Easter holidays the arches still showed abstract designs that had been painted on



The American School in London
Architects: Shaver & Co. (USA)
in association with Fitzroy Robinson & Partners.
Theatre Consultant: James Hull Miller.

the concrete façade to provide background for a recent production of *The Boy Friend*, a show which, curiously enough, James had staged in his home town of Shreveport, Louisiana, when I was enjoying the generous hospitality of the Miller household in the summer of 1967. It would have been interesting had one been able to compare the London/American production of this very English show with the Deep South presentation of some very approximate English characters, probably just as wryly amusing and no more or less approximate than are the attempts of some of our own amateur theatres to give credibility to the characters of Tennessee Williams or the other Miller.

In judging any of this Miller's stage designs one has to accept the basic principles on which he works. He presupposes the use of scenery but not the sort of perimeter scenery used on a proscenium stage. To quote his own words:

> Since an auditorium with open stage is technically called a single volume space, scenery appears in an environment primarily architectural. This interrelation of permanent architecture and custom-designed scenery, though a basic condition for the open stage, is generally misunderstood. Unless the scenery is involved directly with the permanent architecture, as panels for arcade-type theatres, it takes the form of set pieces, by necessity freestanding, which share a common architectural background. This concept, though highly traditional in both the Oriental and Western theatres for centuries, runs counter to popular methods of staging . . . . On the open stage, no matter how literal the details of a set piece may be, the set piece itself becomes a symbol in the total theatre space and is related to it.

The making and the use of his particular type of freestanding scenery (mostly timber frames covered with burlap—hessian to us), methods of projecting backgrounds, the use of curtains and siting of equipment for dramatic lighting, he relates specifically to his stage design. In America he conducts instructional sessions in his own laboratory in Shreveport and in "workshops" all over the States; also, he lectures and writes copiously on the subject.

In this London example of his theatre design, stage and auditorium are completely integrated. They share the same walls and ceiling. The latter is not as high as one would expect, apparently due to limitations imposed by the floor above. As a result, instead of the lanterns for stage lighting being concealed, projecting light through ceiling apertures, they are suspended below ceiling level. The whole of the acting area lighting is provided by profile spots on single barrels suspended about 14 ft. from the edge of the stage. The angle is too shallow and must inhibit effective localising of light and could flatten the stage pictures. This is a pity. In the Miller theatres one has seen in America the lighting galleries above ceiling level have been a most important feature.

The maximum width of the acting area is 54 ft. and the maximum depth from the front edge of the raised stage to the 36 ft. wide façade at the rear is 22 ft. to which must be added the 6 ft. deep steps which must also be regarded as part of the acting area: this depth diminishes to 13 ft. plus 6 ft. at each side. As already mentioned, the stage steps merge at each side with the steps and tiers of the auditorium. The latter have a depth of 4 ft. which is excessive for the fibreglass shell seats. Possibly the seats were an after-thought: the audience may well have been intended to sit on the thickly carpeted tiers in which case the 4 ft. would make better sense, allowing adequate circulation space between opposing bodies and feet.

The seating capacity is 300. The auditorium is acoustically surprising: when empty it has an unusual strength of resonance. When an audience obliterates the reflective surfaces of the seats there is said to be sufficient absorption to reduce this strength effectively.

There is an excellent control room (22 ft. by 8 ft.) with a clear view of the whole auditorium. The 3-preset lighting control is a Rank Strand SP60 and the equipment consists of the Profile spots already mentioned, plus Fresnel spots for down lighting behind the arches and two follow spots in the control room.

This is a little theatre that should be particularly interesting to anybody who may be concerned in any way with the design of multi-purposeful theatre accommodation in colleges, schools and other like communities: its varied usefulness is obvious. One may be disposed to prefer alternatives in matters of detail: for example, it may be thought better not to have the restriction of a too too solid arched façade: it could be more versatile if the structure had been demountable. As Miller himself has said (he seems to be writing most of this article) "diversity of shape is one of the chief advantages of open stage auditoriums and a particular shape may reflect precisely the function of a specific programme". Fair enough.

American School, London

Stage Lighting Circuits

Over Auditorium	36
Follow Spots	2
Over Stage	14
Stage Dips	8
Control SP 60	
(Presets 3. Groups 2)	
Dimmers	60 × 1 kW

A Software Theatre

*Paul Marantz**

Last June (TABS Vol. 29, No. 2), the editor praised a lovably adaptable computerised lighting control for the freedom it affords. Through organisation of elemental electronic building blocks, the control designers' most perverse whim may now be realised. Yet in the same issue, an unsigned editorial remarks that "an adaptable *auditorium* . . . is a rotten idea. . . ." One wonders why adaptability liberates the control while dooming the environment it is supposed to serve?

Student playwrights, directors, designers, and actors at the California Institute of the Arts will soon confront the problems of making a performing space out of a large, empty room. Their new Modular Theatre is a neutral void, purposely deprived of any focus and lacking all the fixed accoutrements of traditional performing areas—gangways, rows of seats, entrances and exits, a stage.

The creative team must provide new "software" for each show. They must assign stage and audience spaces, determine where and at what level the spectators and actors will enter, and indeed, how large a crowd they wish to entertain.

**Paul Marantz was formerly manager of luminaire design at Century-Strand, Inc. He is now engaged in independent design consultancy in New York.*

They are required, therefore, to analyse each new production in terms of its own most appropriate and powerful physical system.

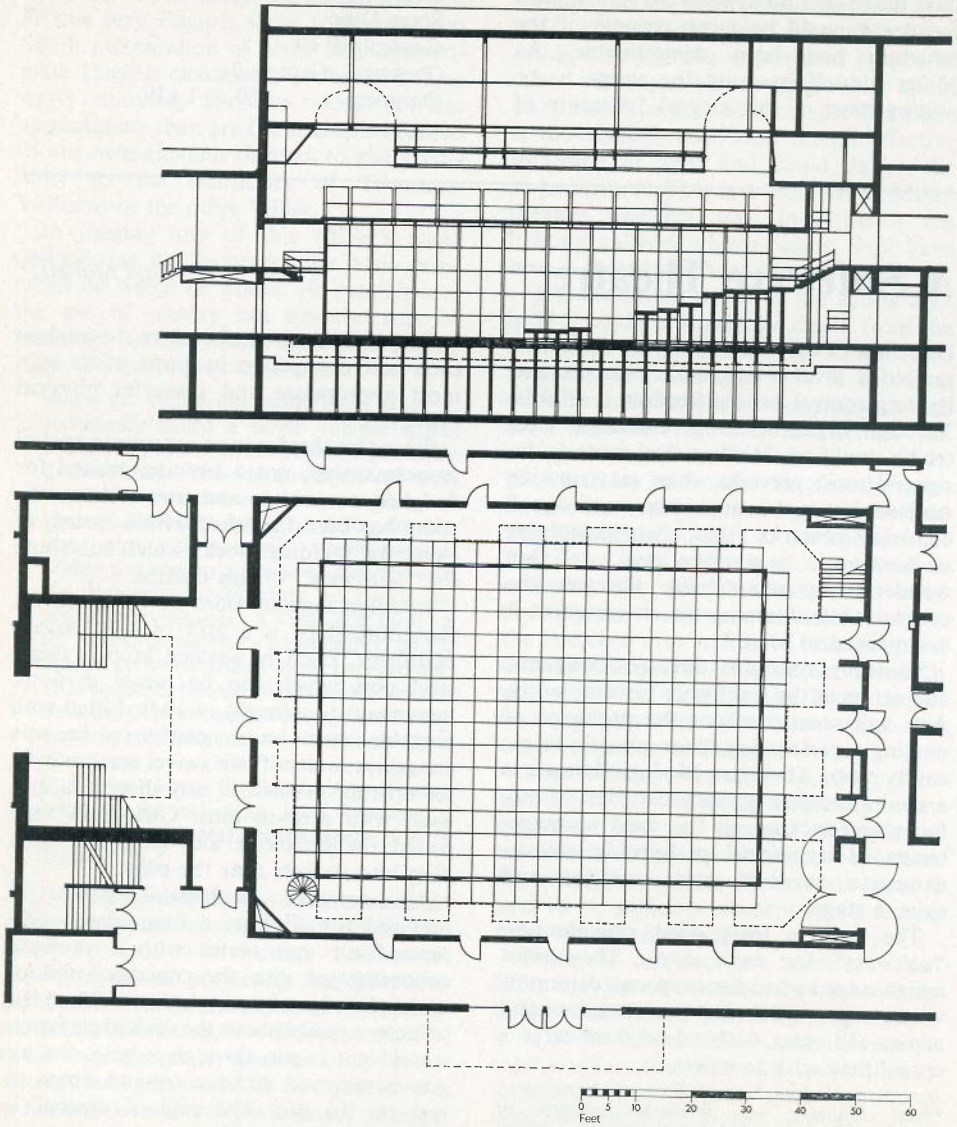
Since this theatre is an exercise in spatial gamesmanship, not a training ground for fledgling carpenters and ironworkers, the room has been furnished with a system of elemental building blocks which constitute the "hardware" of this theatre.

In a rectangular room 56 ft. by 80 ft., the entire floor is a grid of 4 ft. square platforms. Each is perched atop a single steel post which can be raised in 6 in. increments to a height of 10 ft. Fitted with portable step units, platforms become gangways; units of two swivel seats may be set on top, pointed in any direction, and fixed with drop-in pins. Guardrails lock round the perimeter and gangway lights plug into sockets near the edge.

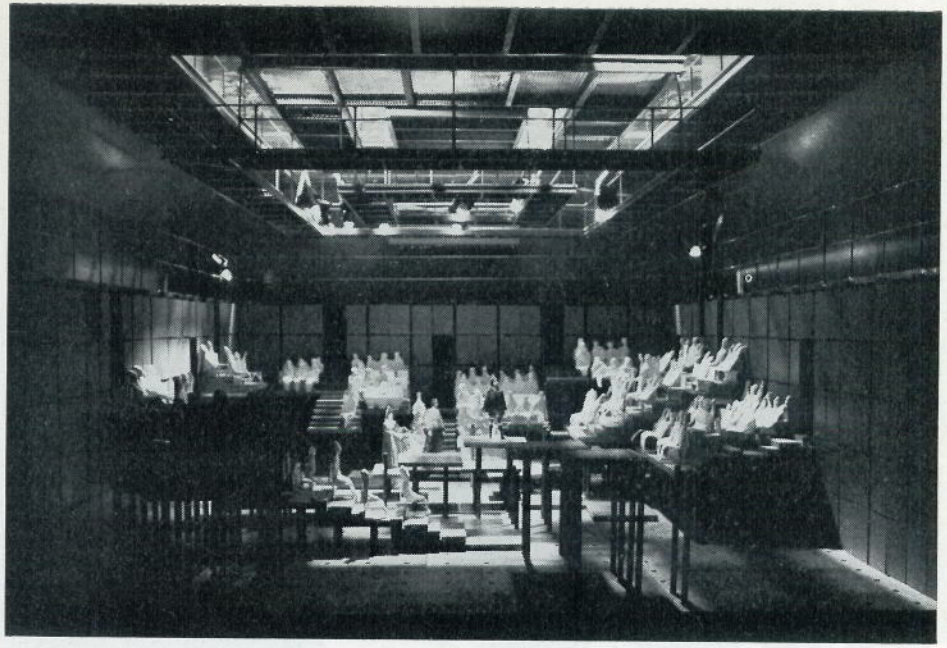
No complex mechanical system is required for all this; a long-nosed compressed air gun mates with a pressure connector set into the concrete subfloor under the edge of each platform. When the column is raised above the desired elevation a steel pin is run through a hole, the air gun is removed and the column drops to rest on the pin. The rate of descent is limited to a safe crawl.

The walls surrounding this space rise

20 ft. to a lighting balcony. These walls consist of 4 ft. square moulded fibreglass panels which hinge inward or may be removed altogether. Two panels thus comprise an 8 ft. high entrance which can occur at any elevation. Structural columns occur at 8 ft. intervals so that 8 ft. by 20 ft. bays may be opened as required. Surrounding the outer perimeter of this panel wall is an additional row of rising platforms which, in concert with the portable steps mentioned earlier, permit entrances to be located at any horizontal and vertical position.



California Institute of Arts Modular Theatre.
Designed by Jules Fisher Associates in collaboration with Herbert Blau



One man can raise a platform, remove a panel, carry a seating or step unit, and lock the lot together without a single spanner in his pocket.

Eighty man hours are required to revise the entire space; student labour is delightfully cheap and there is a minimum of mechanics to go wrong.

At the 20 ft. elevation a wide lighting and projection balcony runs round the entire room and provides sumptuous accommodation for the technician. Actors' access to this level is also provided; Juliet can await her Romeo warmed to the pleasures ahead by a lighted profile spot.

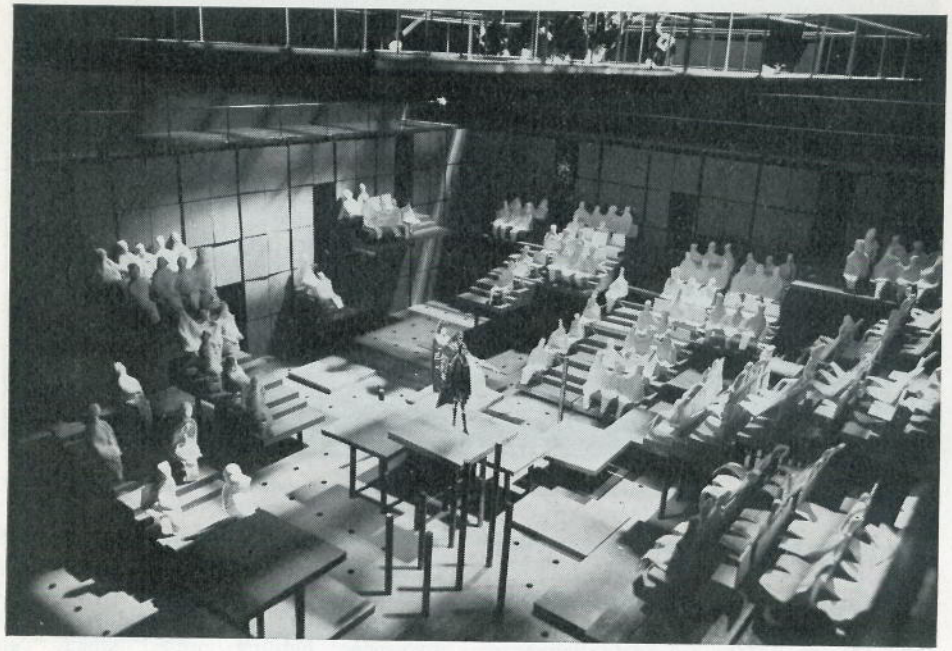
Two catwalks are suspended below a full grid ceiling for additional lighting positions. Under these catwalks, houselights can be selected by a mimic switching panel to conform to the seating plan below. Above the grid, a system of sixteen portable electric synchronous winches are furnished to rig and move scenic elements and properties. Each of these devices can be moved to any position over the theatre space and can raise a load of 300 lb., at a rate varying from 0 to 300 ft. a minute. All are operated from a control which is analogous to a two-scene lighting preset, which can simultaneously reposition every winch, each at its own rate, to an accuracy of $\pm \frac{1}{16}$ in.

The lighting control is a 70 channel 3 preset, 9 group (3 per preset) system. The top portion of the preset wing can be removed to form a compact single scene control for setting lighting from positions within the theatre.

Sixty 6 kW and ten 12 kW thyristor dimmers are connected to 476 load circuits through a plug-and-jack patch panel. This large number of load circuits is dictated by the unplanned random nature of the space.

This theatre is part of a much larger school complex embracing training in all disciplines of the arts and design. Seven other performing areas are planned or in construction. Each of these is a "committed" space, fixed in form and dedicated to a specific performing style. The modular

theatre is a laboratory for research into actor–audience relationships and theatre space development. Labour costs are not an issue here, nor is the size of an audience a governing factor. Most important, the task of revising the space must not be such a tiresome process that this theatre soon falls into a fixed form, forever there to remain. Satisfying this, imagination is the only remaining hurdle.



If you thrust a stage out at an audience or surround an audience by a stage, you are not automatically back in the Sacred Grove. Yet new stages *are* new ideas, and transformed space may, like painting or music, turn on an actor as a play itself really can't. It may even turn on a new play. **A really new space will solicit the imagination to** exceed itself. Something extraordinary happens in the theatre when there is a mortal exchange between a play and a playing space, each testing the other's limits. But actually, it's space we're talking about and not a stage, since we've moved into an era of staging where the whole environment performs. To begin with, however, one likes to imagine a space with infinite possibilities that doesn't get in the way—that may even be invisible—but there to be seized when the spirit moves.

Herbert Blau, Provost, California Institute of the Arts

Opéra du Québec Samson et Dalila

Le Grand Théâtre de Québec

*Victor Prus**

The project of two theatres and a conservatory of music in Quebec City is the result of a Canada-wide architectural competition launched early in 1964 by the Government of Quebec to celebrate, along with other provinces and major municipalities, the approaching one-hundredth anniversary of the Canadian Confederation. Like other centennial projects, it is financed, jointly by the provincial and the federal governments.

The jury, composed of architects Rudolph of New Haven, Bernard of Paris, Blouin, Fiset and Murray of Canada, scenographer Jacques Poliéri of Paris and Deputy Minister of Cultural Affairs Frégault, made its recommendations in October 1964 and the serious work of developing final plans and designs began in 1965. Tribulations followed but, finally, in September 1967, construction contract was awarded and work began on the site. The two theatres were completed in 1970 and inaugurated officially in January 1971.

That early period of planning and design development is still fresh in my memory. It was dramatised by remarkable confusion and differences of opinion among our many consultants. To all this babel of voices we listened attentively and with a considerable glee. It was quite evident that theatre is not as dead as some critics claim. But slowly the fog began to clear and a certain

**Victor Prus is in fact the architect of the Grand Theatre in Quebec and originally wrote this account of his work in French of which this is a translation.*

Salle Louis-Fréchette.

organisation of spaces and the equipment emerged.

The programme established by the competition's professional adviser and his committee, and somewhat modified as we got on with our work, called for a complex of three interrelated components:

1. An opera house transformable into a concert hall or a ballet or drama theatre, seating 1,600 to 1,800 spectators;

2. A studio adaptable for drama, chamber music and recitals, seating 400–900 spectators;

3. A conservatory of music for some 350 students.

Here, a word must be said to give a sense of the particular cultural setting for this programme, for in many ways it differs from a typical North-American milieu. This difference was bound to affect the physical planning insofar as it helped to create, modulate and articulate a particular ambiance suited to the particular flavour and temperament of the French-Canadian social and cultural environment. Unlike Montreal, a somewhat brittle, large, cosmopolitan metropolis, Quebec City is a thoroughly French-Canadian provincial town, ingrown, solid and self-sustaining; proud of its homogeneity, its historic relics, and its character, unique on this continent. Here an evening in the theatre is a social occasion to be attended with ritualistic decorum.

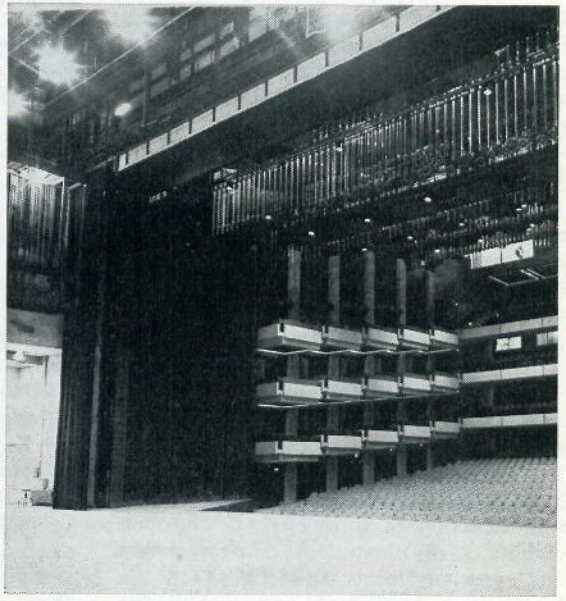
The struggle for cultural identity, so desperate in some areas of French Canada is less evident in Quebec City whose strong, long rooted identity is hardly menaced. Whether this placid existence is fertile soil for the emergence of a vigorous, creative theatre remains to be seen. But it is certain that the theatre will fulfill a vital social function.

As English is hardly spoken here and certainly not assimilated, the dramatic repertoire will have to be very largely French. The local repertory groups, although numerous and strong in talent, will not fill the calendar, and road companies from France, Belgium and other French-speaking countries, mainly from Africa, will be invited. Whether a relatively limited French-speaking audience in Quebec, Montreal and perhaps, Ottawa, will justify the expense of an overseas tour may, of course, be open to question. This as well as other concerns, and particularly concern for the survival of French language, have led to the decision to administer the complex by the State. A governing corporation has been set up and it will work closely with and will be responsible to the Minister of Cultural Affairs.

If this has a slightly sinister overtone to the English-speaking North-American, it sounds quite normal and innocent to the French oriented ear—what with the French state-run Maisons de Culture, French Academy, and André Malraux! It has to be ascribed to the incontrovertible fact of difference, even though my client the Department of Cultural Affairs has acted with commendable restraint, courtesy and respect for others. But benevolent as it may be the government is committed to the policy of defending and nourishing the French Canadian culture by all means at its disposal. Not that it needs encouragement for, in recent years, there has been a remarkable evidence of self assertion, particularly among the young. It is mostly for this reason that the small theatre may become a useful laboratory in which to experiment with appropriate modes of expression of the emerging cultural trend. And as if to emphasise this local background, the original name for the complex, "Le Conservatoire du Québec" has been changed to "Le Grand Théâtre de Québec", a name that may sound grandiose in English but does not really in French. There are a dozen theatres in Europe bearing that adjective without undue pretension.

The Site

The project is situated at the westerly extremity of a vast rectangular area quite close to the Old City (le Vieux Québec) and being developed as the Parliament and Government precinct. When this is completed the theatre will share its vast parking garages. The site itself is very small and fairly noisy as one of the bordering streets has become a major vehicular artery. This circumstance necessitated extremely careful planning. That and the hustle and bustle of downtown traffic caused me to organise the conservatory on two underground levels around a landscaped court sunken below street level. A forest of black spruce and pine further protects it on three sides whilst on the fourth there rises the one simple volume of precast concrete, housing, on this side entrances to the conservatory, its library and discothèque, and on the other side, entrances to theatres, lobby and foyers and, of course, the two theatres stacked one on top of the other.



The long pool at the main entrance was

planned as a cooling device for the air-conditioning system and will serve in winter as a site for snow sculptures.

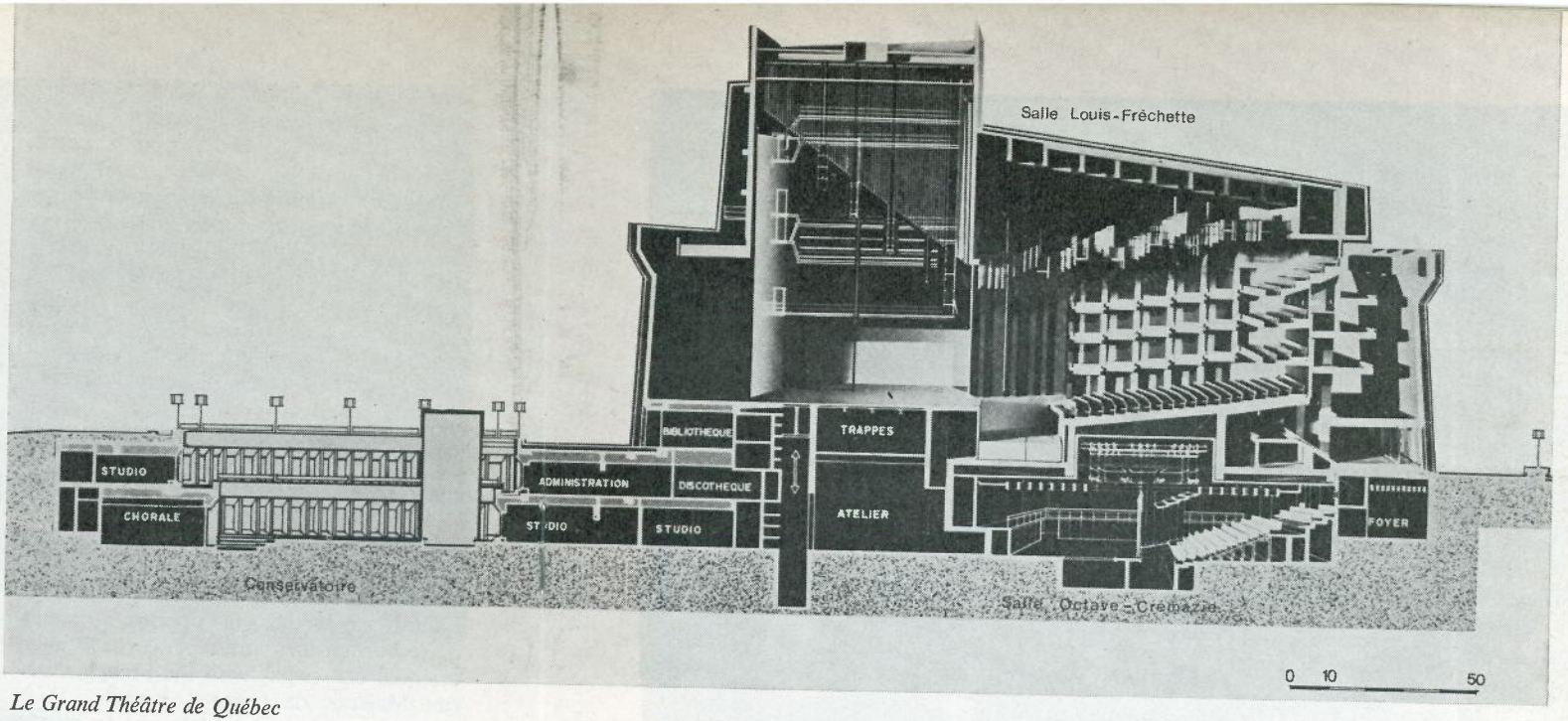
The Conservatory

The conservatory is programmed for the study of music and voice but it can be extended for drama and choreography. It consists of some 75 studios large and small for group and individual practice, a music library, a record library, administration and general services. It is connected with the two halls for the use of facilities and because many of the instructors work there in addition to teaching. Some of these spaces give onto the court and some are windowless, according to function. The court itself is broken up by the garden walls, garden steps and hedges, to permit outdoor practice and occasional informal outdoor concerts. The large studio for choral practice on the garden level has a sliding window wall and can be entirely opened onto a great flight of garden steps from which spectators may watch performances staged in the studio. All studios are acoustically triple isolated and insulated and are equipped with adjustable, sliding reflective and absorbent panels.

The Building

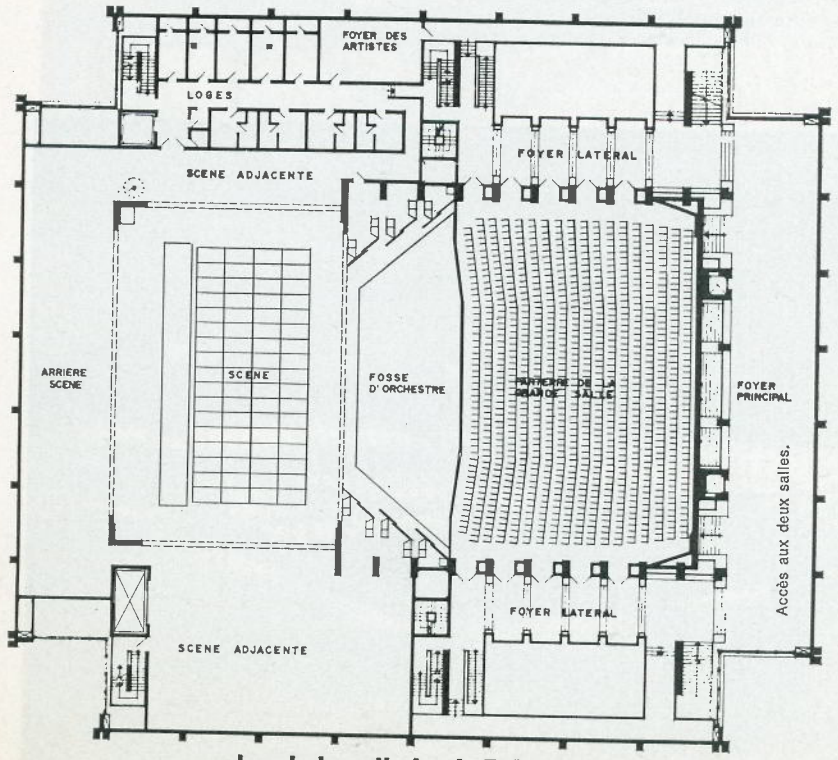
The main building is divided vertically, as it were, by the proscenium wall of the large hall. The east half houses the spectators' spaces: entrance lobby, the foyers and the house. The west half houses the performers' spaces: the stages, the dressing rooms, shops and rehearsal rooms.

Patrons enter the building at the cut-away corners. The glazed entrance lobby at the ground floor level serves both theatres. From here one goes up to the large hall and down to the small hall. Here too, ticketing is transacted at an open counter. A pneumatic post conveys money and reserved tickets in seconds. Off the lobby is a restaurant and a hall for exhibition of works of art. Two flights of stairs and two passenger elevators for paraplegics lead to the foyers. The foyers are arranged on four levels but in one continuous volume of space surrounding, on three sides, the auditorium. The foyer levels correspond to the levels of the house: the orchestra level and the three balconies. Through the glazed corners there are fine views of the city to the east, the mountains to the north and the parks to the south. Otherwise the foyer spaces are surrounded by 12,000 square feet of concrete walls sculpted in relief by Jordi Bonet. The walls are slightly inclined inwards but open up and out to the sky at the top through a continuous skylight. This sculptural treatment is not intended as a mural to be viewed from one vantage point. Rather it is a backdrop against which there unfolds movement of crowds in the foyers. It is ever present as one explores the foyer spaces and its varying and enigmatic forms evoke in the spectator's mind his own individual mood. Thus conceived the



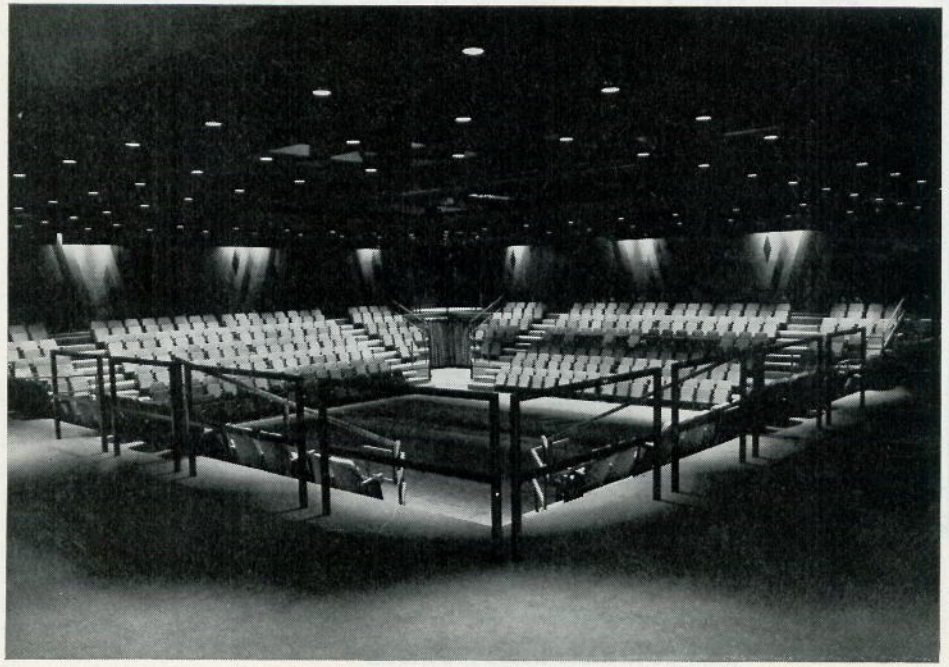
Le Grand Théâtre de Québec

(Top) Section of complex showing the large theatre with the small theatre underneath and on the left the music conservatory.



plan de la salle Louis-Fréchette

Le Grand Théâtre de Québec, Salle Octave-Crémazie
(Above) Set for proscenium with 375 seats;
(Below and opposite) Set for theatre-in-the-round, 600 seats.



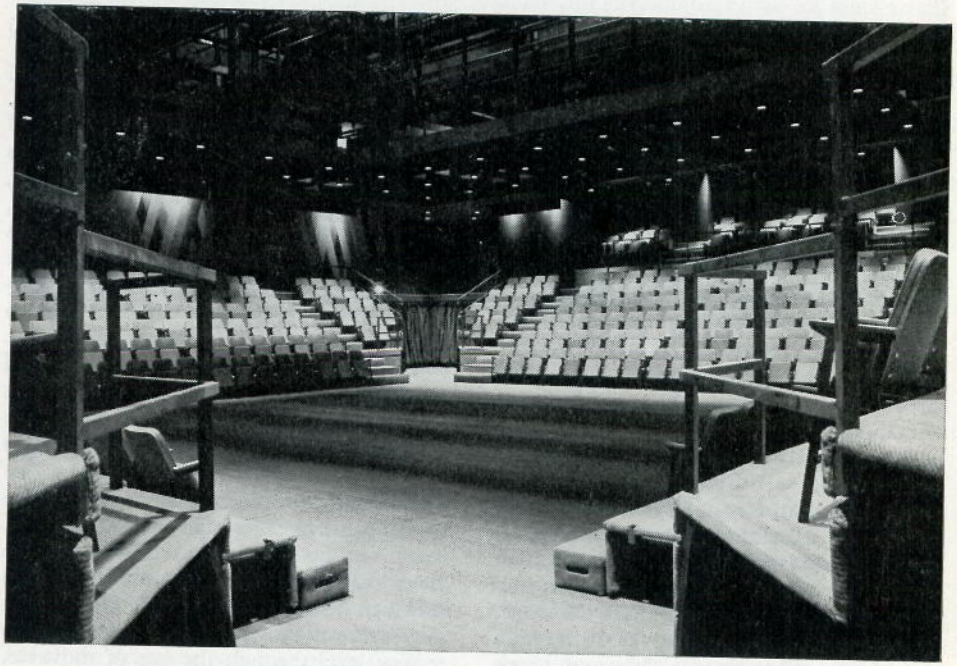
dramatic ambience of the foyers extends and prolongs the stage spectacle during intermission, making in the theatre a total rather than a fragmentary experience.

The Large Theatre (Salle Louis-Fréchette)

The hall itself is wide and square in plan. Its three balconies are very shallow: the first and second have three rows of seats and the third has five. They are without curvature and this produces an extraordinary effect of being close to the stage as the eye is unable to see the extremities of rows. For this I am indebted to Ben Schlanger who long ago advocated the use of this illusion. The straight seat rows continue at the rear of the orchestra level but, closer to the stage, they begin to bend in a somewhat conventional manner. Thirty boxes at three levels at both sides of the house are meant to fulfil a social need but, above all, are there to animate, by their form and human figures in them, the architecture of the house and to impart to the audience a sense of self-awareness.

The house has no usual ceiling. Its volume extends, through the reverberative upper volume to the coffered shell of the roof. This extension is, however, indirect for it is held visually by a galaxy of 6 ft. long, closely spaced, transparent tubes, each surmounted by a small light bulb. This vast chandelier is suspended at the level of service catwalks and interrupted here and there by shallow acoustic reflector discs.

Both the hall and the surrounding foyers are finished in sandblasted exposed concrete, with bronze-varnished ribbed terracotta block panels between columns and grey terrazzo in which float squares of orange and magenta striped carpet. Seats are upholstered in violet tweed and adjustable acoustical curtains are of deep violet velour. All balustrades in the foyers and the boxes are surmounted by handrails of afrormosia teak, some with black leather elbow rests.



Facing the spectator there unfolds a series of stages totalling some 120 ft. in depth and covering an area over three times as vast as the auditorium itself. Equipped with mechanical, electrical and electronic stage devices, carefully selected with due consideration given to pitfalls of over-mechanisation, the stage system is capable of accommodating literally any production.

The forestage, a major innovation, is 28 ft. deep and almost 100 ft. wide and equipped with its own stage equipment and curtains. It can serve as an independent linear stage or as an adjunct to the main stages beyond. It has two independent elevator platforms which, when lowered, form the floor of the orchestra pit combinations, the largest of which can accommodate 120 musicians. The platforms, when lifted to the auditorium level can accommodate some additional 200 house seats. Even though the forestage with its appurtenances is intended as an element of transition between the house and the main stage, no wild effort was made to force integration between spectators and performers. In my studies I could find no overwhelming argument for such an integration. If an art form, demanding total involvement emerges, it will require a different architectural form and as will be seen later in the design of the small theatre an attempt has been made to offer such a solution. Beyond the proscenium of the large theatre there is the main stage (90 ft. wide and 60 ft. deep), the rear stage, the right stage and a small left stage. The stage level is served by a 30 ft. high medium-size elevator for flats and props and a 70 ft. long, two-storey stage elevator for drops, stage wagons and major assemblies. The acting area is trapped throughout by manually operated floor panels with hydraulic lift wagons below. The structure of the traps is so designed as to permit, in the future, installation of four additional stage elevators, somewhat in the tradition of the Vienna State Opera House. A conventional grid, counterweight sets, galleries catwalks, lighting bridges, fire and house curtains and a 75 ft. high cloth cyclorama complete the stage equipment of the large theatre. A fairly elaborate but flexible stage lighting system with 238 dimmers and 660 circuits is controlled by a Strand Century Instant Dimmer Memory system—Memo-Q—for 250 preselections. Its memory storage serves both theatres. Performers' dressing rooms are arranged on two levels off left stage, and carpentry and paint shops, costumes, storage and general service areas are located under stage and adjacent to the small theatre. Over the block of dressing rooms is a rehearsal hall 24 ft. high and large enough to duplicate any combination of acting areas.

The Small Theatre (Salle Octave-Crémazie)

The studio theatre itself is, essentially, one vast simple volume, almost 100 ft. square. It has a level floor and is surrounded at mid height by a continuous gallery. Its stage rigging and stage lighting equipment, though simple and not over-mechanised, is extensive and extremely flexible. It has a small trapped area, a small orchestra pit with a cover, an extensive, universal, two-way lighting grid with catwalks and a shallow loft for flying of minor props. The stage lighting system has 296 circuits and 40 dimmers with 250 preselections. It is connected with workshops and storage under the large theatre and it has its own set of performers' dressing rooms. This simple hall, although capable of conventional arrangements such as proscenium, theatre-in-the-round, and Shakespearean stage, may also be used in a variety of ways in which acting areas and spectators' areas may intermingle at main floor level and the gallery level through the use of movable, modular bleachers that can be folded and rolled into stage alcoves under the peripheral gallery. Thus the small theatre complements the more clearly defined functions of the larger theatre. Programmed and conceived in this manner, the two theatres represent a flexible facility with a wide range of possibilities. It poses a challenge to the wits of the playwright, the producer, the director and the actor and it is my hope will contribute, in its own way to the efflorescence of the arts of the theatre in Quebec.

Compromise

W. E. E. Nicholas†

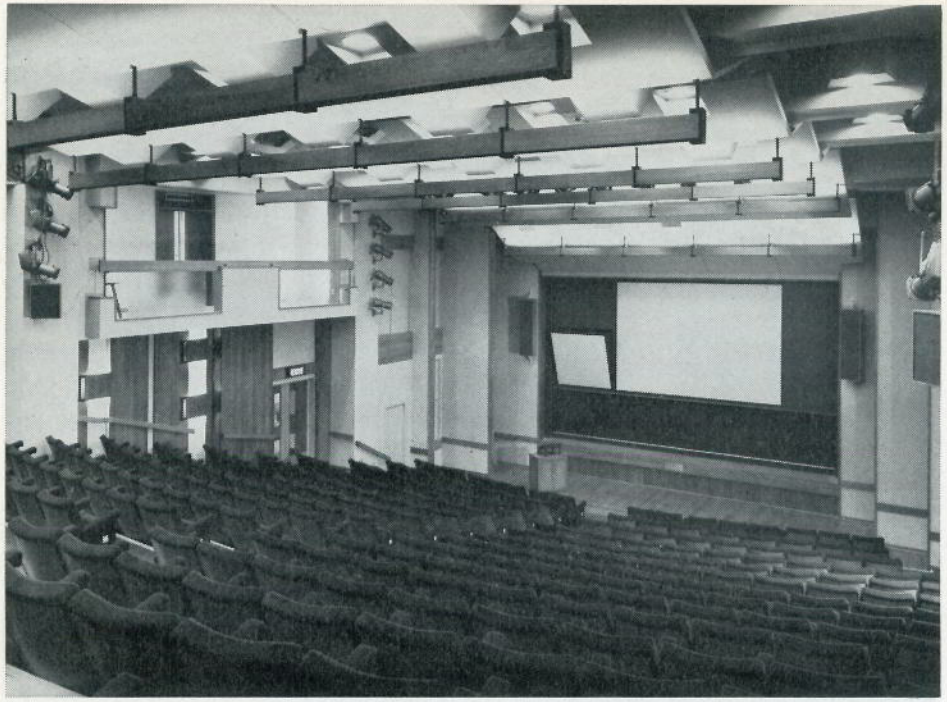
The main building of King's College, built between 1829 and 1834, was designed as a complement to Sir William Chambers' concept of Somerset House by the architect, Robert Smirke, and includes a Great Hall which until now has been used as the venue for all the dramatic activities of the College. This 60 ft. by 40 ft. by 20 ft. flat-floored hall required the construction of a stage and occasionally a proscenium arch whenever a play was to be presented, and therefore, when stage one of the College's general redevelopment scheme was conceived, a drama theatre was one of the facilities that was required to be provided—together with a large lecture theatre.

The resulting theatre is situated entirely underground with the auditorium and fly tower covering a large proportion of the four basement floors of the twelve-storey building whose 100 ft. façade faces St. Mary-Le-Strand*—its design being influenced by the width available between the concrete pillars which support the building, and by its role as the large lecture theatre which, due to lack of space, could not be provided separately. This article hopes to describe the theatre and the way in which the limitations imposed by the building's construction and by the resulting structure and also the problems associated with its dual purpose, were tackled.

The 320-seat auditorium is well furnished —the side and back walls being covered in intermittent projecting cherry wood

†*Bill Nicholas is a physics student formerly responsible for lighting at King's College.*

**One of the two island churches in the Strand; the other is the "oranges and lemons" church of St. Clements.*



King's College Theatre set as lecture theatre with teaching wall lowered and fluorescent lighting for auditorium.

veneer panels which conceal light fittings, the walls being plastered and painted in matt yellow. The saw-tooth shaped suspended ceiling—also yellow—contains the tungsten house lights together with the air conditioning vents, while at each apex of the sawtooth is suspended a hollow wooden batten containing the fluorescent and emergency house light systems, the fluorescent tubes being fitted in such a way that the light is directed upwards and reflected into the auditorium by the ceiling, thus providing a very soft and pleasing light which, together with the tungsten house lights, produces enough illumination for the auditorium's use as a lecture theatre. The tungsten lights are used on their own when the theatre is used for drama, both systems being preset to any level using push buttons provided in the projection room, by the lecturer's bench and on the prompt side of stage. The demonstration bench is situated in the flat area between the stage and the first riser of the raked auditorium and sits on the removable panels which cover the orchestra pit. From this position the lecturer can also control the teaching wall which covers the area bounded by the proscenium arch, which is 24 ft. wide and 14 ft. 6 in. high, and includes two vertically sliding blackboards and two projection screens. The teaching wall runs in a guide on the stage side of the proscenium arch and can be withdrawn into the fly tower by electric hoists when not required. Together with the comfortable seats the auditorium gives the (true) impression that it is a very pleasant lecture theatre.

Four exits have been provided; the two at the rear of the auditorium lead onto the second basement floor which is level with "the box" and music galleries, these being situated on the stage right side of the auditorium. These galleries have access to the off-stage area via a spiral staircase, while the two lower exits lead onto the third basement floor which is level with the stage.

The auditorium being slightly dished, provides excellent sight lines from all seats and has reasonable acoustics. When used for drama it can seat between 270 and 320 depending on whether either the orchestra pit or additional apron stage is used or not. The apron stage is fitted over the orchestra pit—access from the sides being provided by passage ways between the two false proscenium sides. It is hoped to be able to provide a Greek stage deck extension for use in classical drama. The colour scheme though ideal for lectures has been found to reflect a large amount of light from the stage lighting spotlights into the auditorium, though usually this is not too serious a problem.

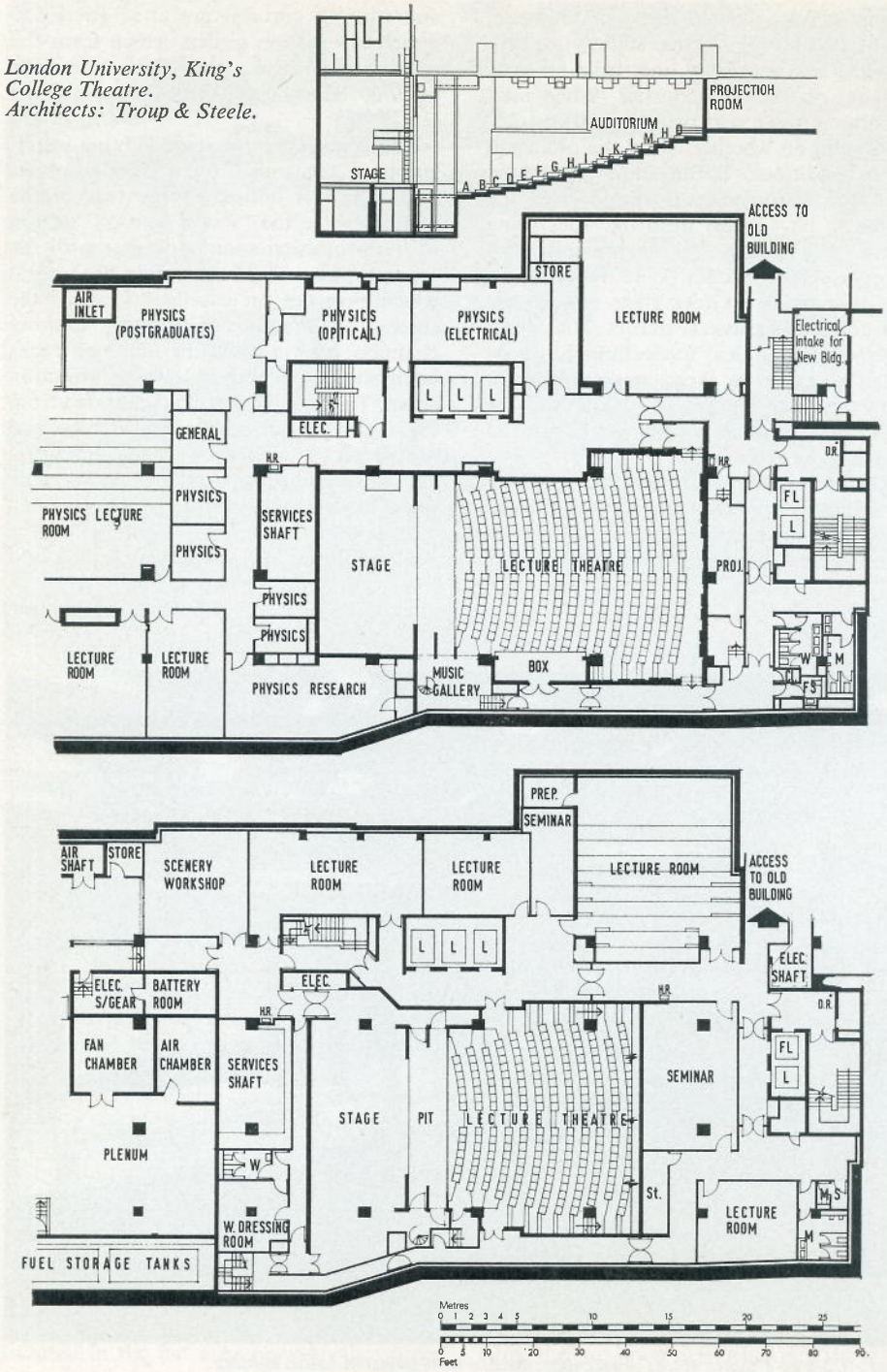
The 36 ft. high fly tower is just adequate for flying scenery with respect to the 14 ft. 6 in. high proscenium arch and, together with the rope suspension lines, the masking and traverse curtains are attached to the three "H" section girders which form the rudimentary grid, the three on-stage lighting bars being suspended on hoist sets.

The comprehensive stage lighting installation is controlled by a SP/60/3-preset desk which is housed at the rear of the auditorium in the "vision control" section of the projection room (together with the 16 mm. film and 35 mm. slide projectors) which provides an excellent view of the stage. At present only forty dimmer channels are in use, the dimmer racks being situated directly below the projection room. The sound control is separated from the vision section and contains tape and record decks together with the amplifiers and mixing console, the tape decks being fitted with "Dolby" noise reduction units.

The forward F.O.H. lighting bar is situated above the suspended ceiling and

King's College Theatre set as proscenium theatre with tungsten house lighting.

London University, King's College Theatre.
Architects: Troup & Steele.



equipped with Patt. 264W spots, access being provided by a catwalk. The other main F.O.H. bar is however bolted to the concrete structure of the roof, with no direct access, causing the adoption of Patt. 223TV Polestars, all fitted with barn-doors. The forward F.O.H. side positions are fitted with Patt. 23N spots, two of which have colour wheel attachments. However, during the later planning stage, it was realised that the forward F.O.H. position could not be used to illuminate the apron stage, therefore another side position was provided nearer the two rear exits. The two on-stage spot bars are equipped with Patt. 23 and I23 spots, the cyclorama being lit by a compartment batten. Additional equipment includes Patt. 60 floods and also Patt. 243 2kW Fresnel spots since it is envisaged that some lectures and other activities will be televised using the Education Department's CCTV and Mobile Recording Unit.

The stage is 20 ft. deep and has a plain plastered cyclorama to a height of 24 ft. and width of 36 ft. which is the full width of the stage area. A perch position has been provided on the prompt side of stage and higher up, a fly gallery. Wing space is at a premium and was limited by the overall width allowed to the building, which was literally fitted into a hole between The Strand and the original building of King's. However, an additional 12 ft. is available to a height of 10 ft. on either side due to the alcove nature of the exits from the stage area, these exits being connected by a 3 ft. wide corridor behind the cyclorama wall which also gives access to one of the dressing rooms. The other dressing room is situated on the sub-basement floor (which is below the stage level, with the orchestra pit). The stage is also equipped with three, manually-operated trap doors.

A small scenery workshop has been provided on the third basement floor; the problem of size and difficult access to the stage area could not be overcome due to the unusual situation of the theatre and academic priorities. However access to the stage for actors is good with the alcove-like off-stage areas providing plenty of room, though strictly the wing space is limited to 6 ft. on either side.

No foyer as such exists though there is restricted circulation space in the corridors leading to the entrances. Other adjacent rooms can be used for seminar purposes and for the serving of refreshments when the theatre is used for drama. However, this theatre was not primarily designed for drama mainly due to its being an integral part of a large building with strict academic priorities. I feel however that the College has been provided with an excellent lecture theatre and a pleasant, workable and well equipped drama theatre. It will, I am sure, be used to the full, and appreciated by those students who remember the presentation of plays in the Great Hall.

King's College University of London
Lecture/Drama Theatre

Stage lighting circuits:

F.O.H.	Forward	5
	No. 1 bar	5
	Side (front)	5
STAGE	No. 1 bar	8
	No. 2 bar	6
	No. 3 bar	3
DIPS		4
FLYS		4
CONTROL SP/60 (Preset 3)		
DIMMERS	26 × 2 kW	
	14 × 1 kW	
Change over circuits		9

The author wishes to thank the College authorities for permission to publish this article and to acknowledge the help received from the College Planning Department.

This Blessed Plot

Francis Reid

Once upon a time there was a TABS man who indulged in a bit of critical self-examination on reaching the tender age of forty and decided that he could no longer withstand the financial and artistic pressures of being a lighting designer. So he swapped his Regency town house for a timber and asbestos shack propped-up on retired railway sleepers by the river, acquired a couple of boats in need of loving care from sandpaper and the varnish brush and moved into his local civic touring theatre as switchboard* operator.

"Ah", said the Editor, "the lighting designer who worked his own switchboard now working other people's plots . . . there must be a TABS article in that."

Well there are no great revelations—except perhaps that people are nicer to switchboard operators than to lighting designers, that battens can be more useful than some lighting theoreticians (myself included) would sometimes allow and that compared with most other theatre jobs, the switchboard operator has an easy life because his area of responsibility is well defined.

The tricky part of switchboard operating is *plotting*: not so much the actual writing down, but the decision as to how a particular cue is to be done. This is true of all types of show, even colour music; although Maestro Bentham scorns the use of a written plot, he has made many operational decisions before cueing the needle into Tschaikovsky.

My own personal Waterloos have come with plotting for shared dimmer systems such as HA and Junior 8, but this does not mean that the memory systems at the other end of the scale do not need plots; indeed the vast amount of information stored within such a system surely increases the possibility of chaos if it is recalled in the wrong order.

In a touring theatre accurate plotting is essential. Monday night's performance can only be as good as the plot, for there is no rehearsal to discover the errors. Indeed the performance often follows so closely on top of the lighting session that there is not enough time to check through the plot much less to convert a *state plot* into a *working plot* as is sometimes suggested in manufacturers' operational manuals.

Indeed Monday night on the switchboard can be quite a hair-raising experience for the operator of a 50-plus cue show when he gets a stand-by for cues 11 to 15 and cue 12 comes before he has completed cue 11. His main concern must be to prevent the experience also being hair-raising for the audience and if possible the actors; a touring stage manager's hair is permanently vertical, for to give cues is certainly more ulcer-making than to receive.

My own attempted solution to the Monday night problem is to try to plot to a simple but fixed routine so that in a panic, *cockpit drill* will take over. Through a modern switchboard there are many paths which lead to the same result; I find it easier to plot on fixed highways and leave the byways for possible boredom relief on pantomime matinees. Also a standard plotting drill is fairer to the understudy who has to do the show if I miss the bus†.

The plotting decisions of course vary with the board: knees or elbows?, pistons?

*Called a Lighting Control in the programme, but see TABS, Vol. 7, No. 3, page 80.

†The boat? ED.

Theatre Royal, Norwich. Author at the lighting control.

new preset? In many ways non-memory preset boards are the most difficult to plot because we have the possibility of all masters, all presets, all groups contributing to any given light state on the stage.

This is a situation to be avoided because under these circumstances it is very difficult to tell at a glance exactly what is controlling the light level of any particular lamp, and in any case the need to preset as far ahead as possible encourages one to free presets from performing the inert task of holding lighting in current use. My own cockpit drill for these boards (which are rapidly becoming the most common types) is to aim for a *normal* or back-to-square-one state. For example, as frequently as possible, I like to get on to one preset only and when I form groups for a particular purpose I like to destroy that group and get back on to one master as soon as that particular purpose has been achieved. Of course in my theatre I am particularly lucky (perhaps luck is not quite the right word as I chose the switchboard) in having a Lightset where I can de-group at the touch of one button.

On a preset board, the fundamental decision is usually between group and new preset. In broad terms this is usually answered by considering whether any of the moving channels are already alive, although it is often worth combining group mastering and hand movements on a few individual channel levers which are only moving a couple of points. But after a few cues of this sort I like to wipe the slate clean of cumulative error and get to a fresh preset.

The information to be recorded on a plot divides into two categories: *preparations* and *actions*. The time available between cues for resetting is often the critical factor; it is certainly the most blood-pressure-raising factor on a Monday night, although by Wednesday one always wonders what all the panic was about.

However, I certainly find it advisable when I hear the words "Electrics go!" to be able to react to an action command simply written beside the cue number where my clothes peg is resting. And then having done the cue, my need is to go to a clear instruction on what to prepare next.

Everyone has their own personal format for a lighting plot; all sorts of things like finger prints, beer stains, etc., rapidly become landmarks as one drives through a performance (see illustration).

A lighting plot cannot of course show absolutely everything. There is a human element in timing which is what live theatre is all about; if anyone doubts this, let him try working a switchboard on the *Black and White Minstrel Show* where the actors' timing is controlled by the taped sound. With a good plot the operator can relax at the moment of "Electrics Go" into giving his full attention to the timing.

Postscript: a couple of practical requests.

Lighting men:
When plotting it helps to tell the operator what sort of cue it is going to be, i.e. crossfade, fade-out of certain channels, etc.

Stage Management:
If you say "Go Electrics cue 25 please" it is difficult to know exactly on which word the cue is supposed to start. "Electrics cue 25 (pause) GO" is positive and provides a second stand-by on which to tension the hand muscles.

Key to "blessed plot" opposite

Q Column Cue number. Vertical lines indicate cues which come close together (normally on the same warning).

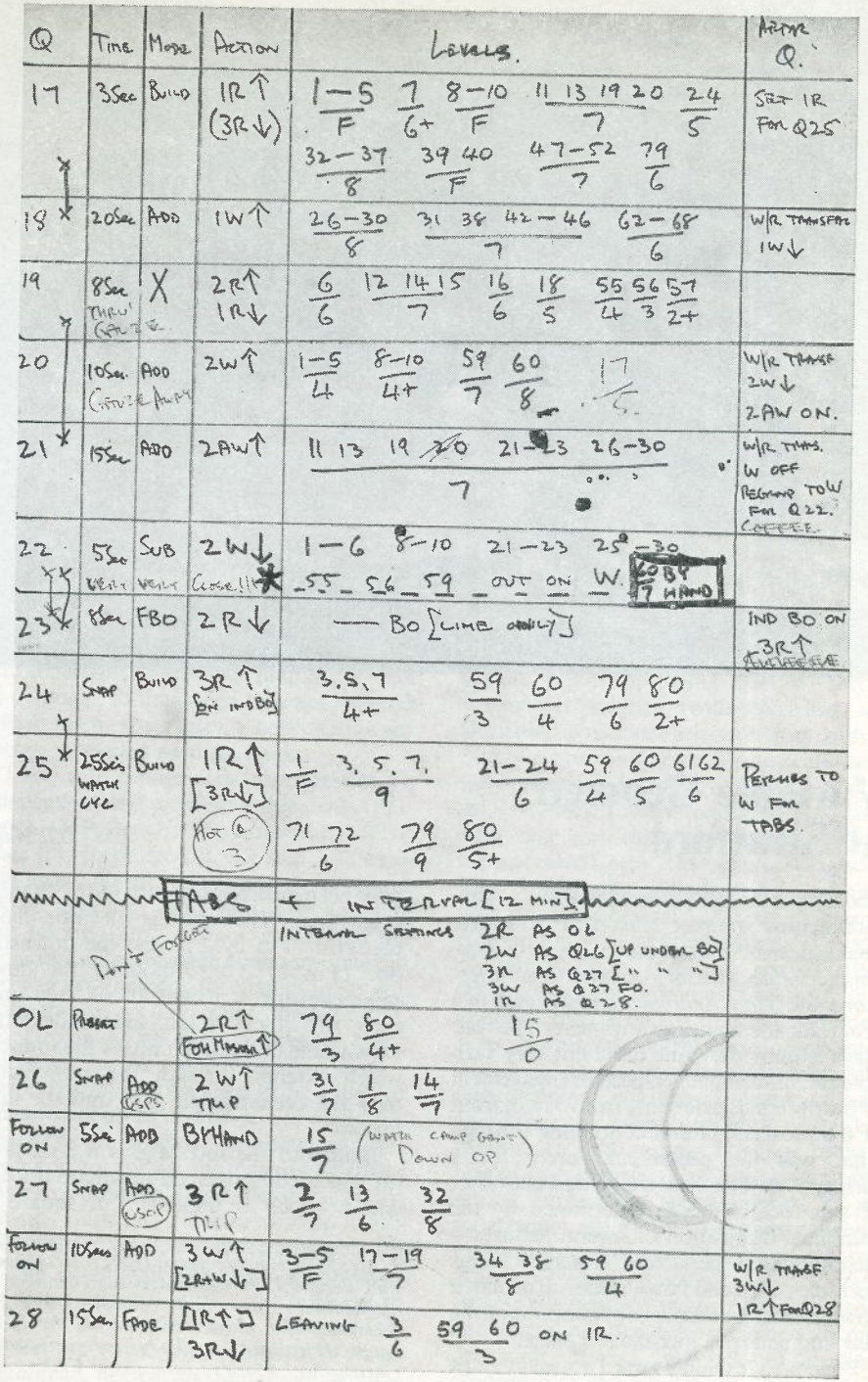
Time Duration of movement of cue. Descriptive remarks such as "watch cyc" give help in determining the rate of movement within the overall timing.

Mode What the cue does, i.e. builds, fades, crossfades, etc.

Action The masters to be moved and the direction of movement. Brackets indicate that a master can be positioned before the cue (as when dropping to lower levels) or need not be removed until after the cue (as when building to higher levels).

Levels The cue state in terms of preset levels.

After Q Actions to be taken after completion of the cue including regroupings of the live preset and an indication of which cue to reset on the newly-dead preset.



Variable Geometry at Stratford

*Bill Nunn**

The Royal Shakespeare Company is presenting this summer season at Stratford, Shakespeare's four Roman plays: *Coriolanus*, *Julius Caesar*, *Antony and Cleopatra* and *Titus Andronicus*, performed in a group for the first time anywhere. The four plays employ the same basic but very variable set, inducing a perspective engagement of the observer, extending from 5 m in front of the proscenium and continuing through what was the proscenium arch, for a further 9 m. The size, shape and character of this focal arena is determined by the combined disposition of several features—including four periactoid towers, various portable props and flown pieces, articulated flown borders, and the configuration of the new and enlarged mechanised stage.

Previously existing were two main stage elevators adjoining each other and these have been incorporated into the mechanised stage area. The upstage elevator has a platform 11 m by 2 m and the downstage one 11 m by 3 m. Adjoining the downstage elevator is a bank of six step units, each of which is an independent lift. Downstage of the step units is the forestage which extends through the proscenium, over the orchestra pit 5 m into the auditorium.

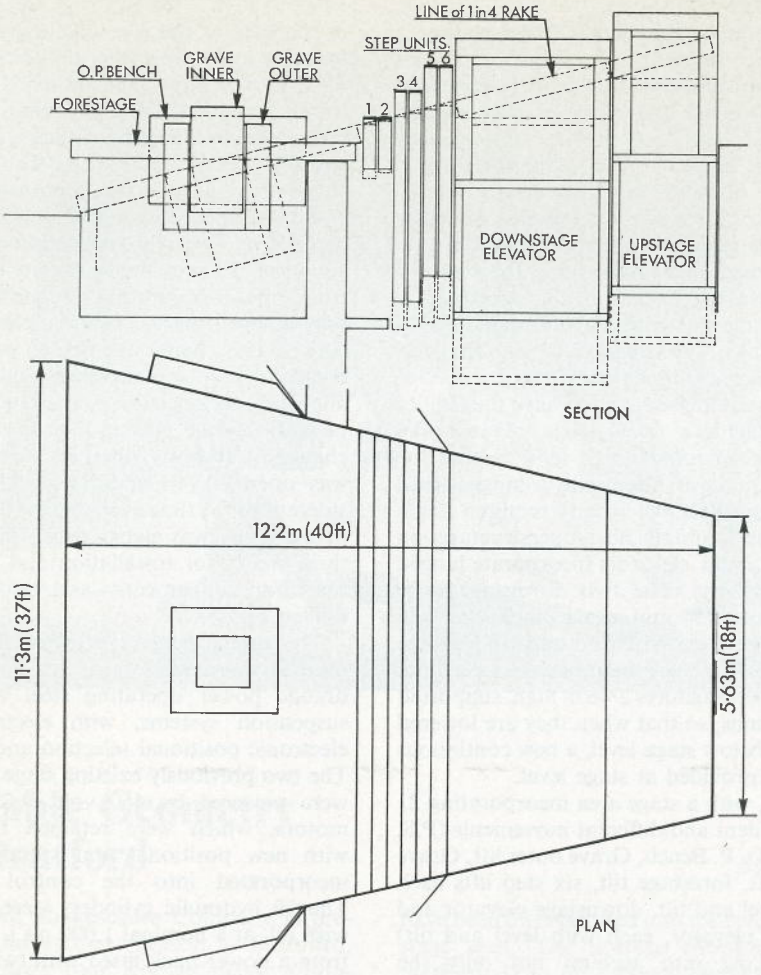
Built into the forestage is a dual grave lift which comprises a 2 m square lift unit, within which is another 1 m square lift functioning independently. The forestage is hinged to permit any attitude between horizontal and a rake of 1 in 4. To each side of the forestage are assembly areas at stage level and built into these are two bench unit lifts, one each side of the forestage—the face of these two lifts forming part of the face of the assembly, revealed when the forestage is raked. The mechanised area is 12·2 m measured up the stage, the width of the downstage edge of the forestage is 11·3 m and the width at the upstage edge of the upstage elevator is 5·63 m. The step units have 250 mm treads.

As a requirement was to have the facility of producing a raked stage, of any rake between horizontal and 1 in 4, each of the six step units is fitted with a hinged tread which can be tilted to any required angle up to 1 in 4, and the new superstructures on the two main elevators incorporate hinged top platforms. The two downstage steps can rise to 450 mm above stage level, the next three steps to 2·3 m and the upstage step to 2·46 m. The main elevators are fitted with superstructures 2·46 m high, supported on columns, so that when they are lowered 2·46 m below stage level, a new continuous floor is provided at stage level.

Thus, with a stage area incorporating 21 independent and different movements (P.S. Bench, O. P. Bench, Grave outer lift, Grave inner lift, forestage tilt, six step lifts each with level and tilt, downstage elevator and upstage elevator, each with level and tilt) and taking into account not only the numerous different stage configurations but also the requirement to change from any configuration to any other configuration, and aiming at all the movements being completed in the same period of time—irrespective of the distance to be travelled and whether up or down—it was obviously necessary to provide infinitely variable speed control for all movements wherever possible. Although large members of the previous stage and elevator support structure were removed, the space available for the new equipment was severely limited as any major excavation on a site adjacent to the River Avon was out of the question. The form of power supply had therefore to be compact, flexible and very quiet being—in the case of the forestage drive—only a few feet away from the audience. All the moving structures were designed with the lowest possible economic weight to strength ratio in the limited time available for design and manufacture but during the use of the stage area when static, enormous loads could be imposed upon the support system, demanding special consideration of this situation. To provide the facility to change from one configuration to another, with only a short interval between changes and with every change occurring on cue, a control system was necessary which would allow the pre-selection of the required new position of each part and the simultaneous change of all parts when a master control was operated. In addition to these considerations the time available for design and manufacture was eight weeks, followed by three weeks for installation and a further week for adjustments—and on a strictly limited budget.

The design scheme conceived to meet these requirements was to employ hydraulic power operating steel wire rope suspension systems, with electrical and electronic positional selection and control. The two previously existing stage elevators were powered by 460 volt D.C. electric motors, which were retained but fitted with new positional and speed controls incorporated into the control console. The 19 hydraulic cylinders were supplied with oil, at a nominal 1,000 p.s.i. pressure, from a power pack fitted with twin pumps of variable flow, pressure compensating design, working in conjunction with twin accumulators. Control of ram movement is by directional control valves, each fitted with two actuating solenoids; energising one solenoid produces upward motion, energising the other produces downward motion. In each supply line was fitted a rate of flow control valve, with micrometer setting, providing speed control of all movements, up and down, independently. Positional control of each moving part was achieved by mounting four microswitches, sensing the position of the part concerned, and interconnected through relays to predetermine correct direction of motion, according to the relationship between the

* *Mr. Nunn is a director of IES Projects Limited who designed, manufactured and installed the mechanised stage and control systems he describes. The plays are directed by Trevor Nunn with Buzz Goodbody, and designed by Christopher Morley with Ann Curtis, John Barton and Ewan Smith.*



existing position and that selected as the next position. All microswitches were mounted on mobile platforms sliding on rails, with thumbscrew clamps, to facilitate quick resetting of deads. The bench units were exceptions, being required with only two positions—fully up or stage level. The panel of the control console is arranged with a central array of illuminating push buttons in 21 vertical rows, each row containing four different coloured buttons (except the bench units, having only upper and lower), and each button selecting a microswitch controlling the destination of the part concerned. Operation of a push button latches in a relay, in the console, which illuminates the button and pulls in a mains relay at a remote station below stage. When all required destinations have been preselected, operation of the "RUN" button brings in the principal contactor, connecting the mains supply to the valve solenoids via the microswitch circuits selected. As the parts arrive at their destinations the microswitches are operated, unlatching the relays and also thus cancelling the supply to the lamps in the push buttons. Also on the console is an "EMERGENCY STOP/RESET" button, and indicator lamps for the power supplies. An additional, remote, hand-held control box with override "RUN" and "STOP" buttons is provided. All the systems at the console operate on 24 v. D.C. supply.

The advantage of this scheme is the smooth, positive, quiet motion of hydraulic cylinders, together with the capacity to sustain large imposed loads, with a minimum of rotating parts and absence of brakes, gear-boxes, chains or vee belts, while providing the facility for infinitely variable speed control and accurate positional control. The power pack may be situated remote from the audience to avoid disturbance from the noise of the pumps, and the supply pipe lines run to the cylinders by whatever routes happen to be convenient. The accumulators store sufficient energy to power the full stroke movement of all cylinders, simultaneously, at maximum speed, and can be recharged to full pressure, from empty, by the pumps running for only one minute. The control valves are provided with manual operation, overriding the electrical controls, so that by using the energy stored in the accumulators, the stage configuration may be changed without the use of electric power or the normal control panel. As the cylinder rod has a fixed stroke, hydraulically powered mechanisms cannot possibly overshoot the end of stroke positions.

One of the interesting problems in the design arises from the tilting of large areas. The tilting of the treads on the step units produced only a small increase in the working clearance between one and the next, but when the platform on the downstage elevator was raked at 1 in 4, the upstage edge was over 100 mm downstage of its position when horizontal. This was dealt with by arranging that the hinge position of the platform on the upstage elevator was situated to produce a similar displacement of the downstage edge of that platform. In the case of the forestage, the hinges were mounted on columns that were pivoted at the base, and restraining cables ensured that as the front of the forestage was lowered it also moved horizontally upstage, maintaining a small clearance between the back of the forestage and the first step unit.

The six step units, sandwiched between the forestage and the downstage elevator, required special consideration because it was impossible to provide any supports or guides, except at the extreme ends. Thus these structures—8 m wide, 3·7 mm deep and only 230 mm thick—were required to be flat and square and free from twist to within 3 mm all over. Careful design of construction and accurate fabrication produced the required result but each piece then had to be transported to the theatre and handled into position in the new stage structure, without distortion. One unit was in fact distorted during transit, but painstaking straightening at the site corrected it to within working tolerances.

The programme of installation was full of interesting situations. In addition to the installation of stage machinery considerable changes were to be made to the auditorium and in the area of the proscenium arch, as well as fitting in new lighting bridges and putting in a new false floor over the whole area of the stage surrounding the moving parts. A carefully considered programme for manufacture was devised to achieve completion of the various parts by the time they would be required—for transport to the theatre and provision of cranes and handling equipment to ensure that each part could be placed immediately in its final position—for installation priorities to ensure that structures would be positioned before access was lost due to other operations, new obstructions or loss of heavy load-bearing routes on the stage—a programme which was actually a list of successive potential crises. Inevitably the programme changed daily and the schedule of work was altered, twisted, stretched, squashed and bent according to the developing situation and what supplies had been most delayed as a result of the coal strike, which ended a few days before installation began.

In order to make the maximum use of every hour a night-shift crew concentrated on mechanical installation, while electrical installation continued during the day and the installation of the hydraulics was begun with a night crew which was later supplemented with an additional day shift crew.

The size of the teams varied from time to time according to the optimum number for each particular phase. Each phase had its own dead-line which had to be met if we were to avoid disruptions of the following phase and the pressure on the crews did not slacken throughout the entire installation.

During the first part of the installation period the orchestra pit was occupied with scaffolding from which the work of fitting the new forestage ceiling and panels around the proscenium arch was done. This led to the forestage structure being the last element of mechanical installation in the programme. The power required to move and support the forestage is transmitted to the structure through a continuous beam 11 m long and weighing nearly two tons. In order to install this beam and other bulky sections of the forestage platform two mobile gantrys were built, designed to span the orchestra pit—short legs at one end being on the stage and longer legs at the other on the auditorium floor. As the legs on stage had to pass across the step units and impose point loads of nearly a ton, the step unit structures were adequately proof tested during the installation of the forestage.

It reflects very well upon the co-operation between the staffs and trades and all the companies concerned during this very difficult building programme that the whole project was ready on time in spite of all the problems faced.

Mirror, Mirror through the Wall

*A. M. Griffin**

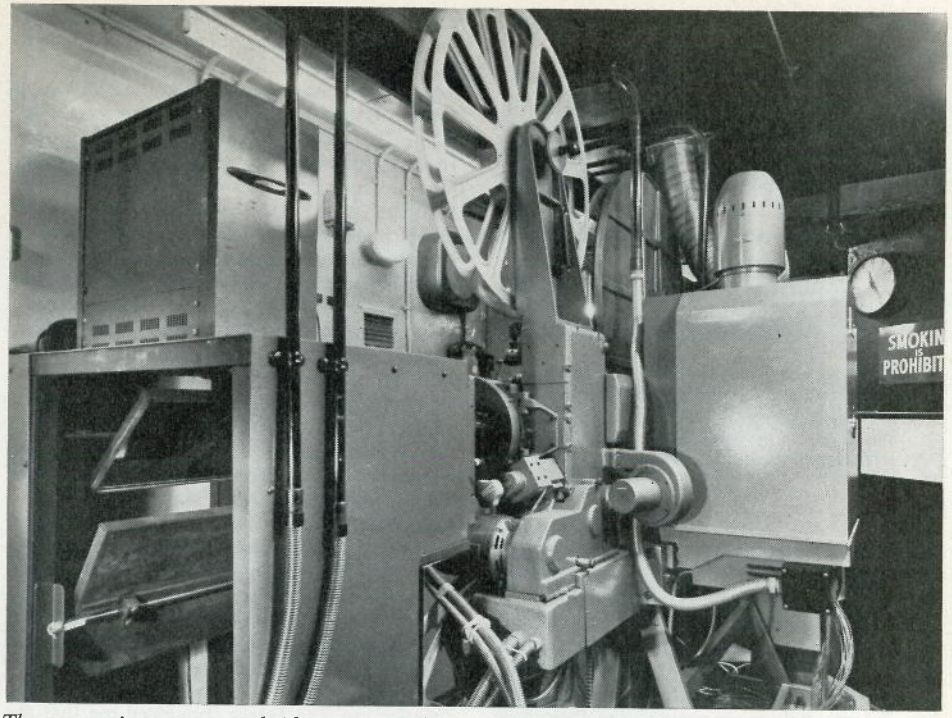
The Piccadilly Theatre opened in April 1928 with a musical comedy but almost immediately made a brief excursion into cinema with the first all-talkie picture in London—Edgar Wallace's *The Terror*. The system then used was the Warner Brothers' Vitaphone which endeavoured to synchronise slow-running gramophone records with the films. November 1929 saw a return to live theatre and as the years passed more stage productions were presented until eventually the cinematic side was dropped and the theatre's resources were channelled entirely into live theatre.

The building has now taken on a new role—that of a cinema/theatre. This means that the theatre can present films on Sundays or for a short season without any disturbance to its ability to function as a theatre. The original cinema licence has never been allowed to lapse and when the decision was taken to install new projection equipment plans were able to go ahead swiftly.

There were major problems associated with the supply of projection equipment. The old projection box originally designed for silent films, now housing two Rank Strand follow spots, could not be structurally altered and was still required to house the spots, which meant a severe limitation on the available width, not sufficient to accommodate two projectors. A further limitation was the front-to-back space required by modern, high-capacity equipment. Moreover, there was a severe projection angle (31 degrees negative) which, under normal circumstances, would have ruled out the Xenon projection required in this case for automation purposes; and lastly, to allow stage productions, a large screen was needed which could be easily dismantled and stored.

Bearing in mind the theatre's desire to have equipment which could easily be automated, a Cinemeccanica Victoria 18 with Xenon light source was recommended. The Victoria 18 has a back set of reels able to accommodate up to 4,000 m (13,200 ft.) of 35 mm film and a front set to handle up to 3,000 m (10,000 ft.). These give 2 hrs.

* *Mr. Griffin is in charge of sound and projection in the Film Equipment Department of Rank Strand Electric.*



The new projectors mounted sideways-on in the Piccadilly. Note the mirrors left.

24 mins. and 1 hr. 50 mins. of running time respectively. It is only necessary to visit the projection room during the interval to thread one or other of the two films in the gate—the whole show including the rewinding being done on the machine. Illumination is provided by a 2½ kW Xenon lamphouse and the sound is handled by a fully transistorised sound system.

Space dictated that the projector could fit only one way—between the spots and parallel with the front wall. The problem of how to get the picture on the screen was solved by a unique three-mirror periscope, fully enclosed to meet fire regulations. This allowed the projector itself to operate level, the first mirror diverted the picture through 90° towards the front wall, from whence the remaining two mirrors bring the image down and out at an angle through the auditorium and on to the screen.

This three-mirror system in itself caused a problem since, in order to get the picture the correct way round on the screen, it was necessary to project the film reversed, i.e. emulsion out, which brought the optical sound track on the wrong side. This was solved by specially modifying the sound head and placing it on the "wrong" side of the gate.

The third and final stage was the screen. Eventually it was decided that a Rank Harkness roller screen in a box which could be flown was the answer, with easily assembled stiffening rods being employed to brace the screen when erected. This was not quite the end, since it was also ascertained that in order to accommodate the picture without too noticeable a keystone effect caused by the large negative projection angle, it would be necessary to tilt the whole assembly. This has been done and the screen functions at an angle of approximately 15° positive, which gives an effective projection angle of approxi-

mately 15° negative, less than in many other theatres.

The Piccadilly made its first return to the cinema role earlier this year with the film *Oliver*, and the time taken from order to opening—including all discussions with GLC officials, special modifications to equipment and special equipment, e.g. periscope and screen—just four weeks.

Back to 1928

James Agate was drama critic for *The Sunday Times* and for the BBC in the 'twenties and early 'thirties. These extracts come from his film criticism in the *Tatler* about the same time.

There was altogether too much cry and too little wool about the vitaphone performance at the Piccadilly Theatre. Those things which were solved were not problems, and no solution was offered of the one and only problem which was of real interest to the cinema-goer. I shall deal separately with each half of this statement. We all knew before we went to the Piccadilly that the problem of synchronisation had been solved. The cinema-goer cares nothing at all whether synchronisation is done by boring holes in a disc or cutting slits in a ribbon, and the vitaphone could do no more than other machines. I shall not criticise in detail the variety programme submitted by Messrs. Warner Brothers, for the reason that half of it was worthless as variety entertainment and merely elucidatory of what we could surmise for ourselves—that the banjo can be synchronised as well as the human voice . . .

I come now to the problem which the performance at the Piccadilly Theatre made no attempt to tackle. That problem, put simply, is this: Will the talkies increase or decrease the spectator's illusion that he is looking at life? The theatre has imposed upon us, and we have agreed to accept, a number of conventions as the result of which the spectator in the theatre appears to be looking at life through a fourth wall. Up to now the conventions of the cinema have asked us to believe that we have been looking at life through a glass and sound-proof window. Will the percolation of sound through that window increase or decrease illusion? . . .

Now in the matter of illusion one should remember that the screen has always been most successful when it has relied most upon the reality of action and least upon the pretence of speech. In other words, it has done best when it has got farthest away from the theatre. Indeed, this was to be expected as soon as the film pretended to be an art. Messrs. Warner Brothers claim that the vitaphone is one of those inventions which have revolutionised industry and art. "Industry" may be true; "art" is pure nonsense. It is not within the power of ironmongery and engineering, however complicated and inspired, to revolutionise art, whose laws are immutable. Among those immutable laws is one which lays down that of two examples in any art that one will be the more effective which sticks the closer to its medium. . .

It seems to me that the voices will have to be delightful, and the dialogue wittier than that of the average stage play. I hope I am not condemning the talkies beforehand, but I suggest that this is a fence which will require an immense amount of negotiating. Fortunately, America is one of those countries where nothing except the impossible seems worth achieving. At least that is the view to which the artless babble of her publicity-mongers has persuaded me. I confess that what I saw and heard in the "trailer" to *The Terror* convinced me that the talkies are damned. Miss May McAvoy is a delicious little person whose silent miming I could watch for hours. But five minutes of that accent would drive me into the street, for the salutary, precautionary reason that ten minutes of it would drive me into Bedlam.

. . . No, unless all the talkies are to be written by Mr. Frederick Lonsdale, for which I can hardly hope, I can see nothing before me except a nightmare in which unspeakable drivel is snuffled at me by actors who have never learned to talk. I remember a good many years ago hearing a speech by Victor Grayson, the one-time Socialist M.P. He said that he was so great a believer in the accurate use of language that he would never use any word unless he could derive it from its original roots. The date was just about the time when tinned music first began to excite public attention, which accounts for the heckler's choice of word. "Derive the word *gramophone*!" he shouted. "That's easy, my friend," replied Grayson. "*Gramophone* is derived from two Greek words—*gramos*, I speak, and *phonos*, through a tin tube!" And that, dear readers of the *Tatler*, seems to me to sum up the talkies exactly.

Synopses

Shut That Door!

Une représentation non-réaliste de l'opéra tour à tour facilite ou compromet le maintien de l'illusion. L'Editeur, citant une anecdote de circonstance, aimerait bien savoir jusqu'où va la compréhension de l'auditoire. A son avis, une actrice qui a froid devrait fermer sa porte!

Das Aufrechterhalten der Illusion wird bei unwahrscheinlichen Darstellungen in der Oper abwechselnd leicht und schwer gemacht. Der Redakteur fragt sich an Hand einer diesbezüglichen Anekdote, wieweit sich die Fantasie der Zuschauer strecken lässt. Er ist sich gewiss, dass eine Schauspielerin, der es kalt ist, die Tür ihrer Bodenkammer zumachen soll.

Handing it Out

L'Editeur s'attaque ensuite à la presse qui substitue aux faits des clichés faciles, et à la télévision qui accorde peu de temps à l'expert. Les sujets techniques, y compris ceux du théâtre, révèlent leur force et leur faiblesse dans l'exposé des détails.

Der Redakteur kritisiert die Presse, weil sie Tatsachen durch abgedroschene Redensarten ersetzt und das Fernsehen, weil es Fachleuten zu wenig Zeit lässt, sich auszudrücken. Technische Themen, inklusive die der Bühnentechnik, zeigen ihre Stärke und Schwäche hauptsächlich bei der Behandlung von Einzelheiten.

Of Mice and Men

21 ans se sont écoulés depuis la première de "Mousetrap", pièce d'Agatha Christie, à l'Ambassadors Theatre. Patt 23 venait d'entrer en service. Michael Northen décrit quels ont été ses efforts depuis 1961 pour faire profiter l'éclairage des constantes améliorations techniques.

Die Erstaufführung im Ambassador Theatre von Agatha Christie's Kriminalstück "Die Mausefalle" ist bereits 21 Jahre her. Damals war der Scheinwerfer Patt.23 erst jüngst eingeführt worden. Michael Northen beschreibt sein Bemühen, seit 1961 die Bühnenbeleuchtung mit dem Laufe der Zeit Schritt halten zu lassen.

The Lisbon Connection

"Gulbenkian" s'impose rapidement comme un nom commun de théâtre. A Lisbonne, où Gulbenkian mourut, la salle de concert qui porte son nom subit quelques transformations secondaires pour permettre des spectacles de ballet, par exemple. Un cintre étant exclu à cause de la construction, tous les décors sont fixés sur des monte-charge. Même le fond de scène peut disparaître sous la scène et, à travers un grand panneau de verre, on peut alors apercevoir les jardins, un arrière-plan naturel pour la représentation.

"Gulbenkian" wird in zunehmendem Masse als Theatername angewendet. In Lissabon, wo Gulbenkian starb, ist die Konzerthalle, die seinen Namen trägt, im Begriff verändert worden, um Bühnenvorstellungen, wie z.B. Ballett, unterzubringen. Da ein Bühnenturm nicht möglich war, sind alle Kulissen auf Aufzügen gebaut, die sich tief unter die Bühne versenken lassen. Selbst die Hinterwand der Bühne kann unter den Bühnenboden sinken. Durch eine riesengrosse Glasscheibe kann man den Garten sehen, der einen natürlichen Hintergrund für die Darstellung bildet.

The Paul Thöne Hall, Gütersloh

Une ancienne salle des fêtes à Gütersloh, Allemagne construite au tournant du siècle et utilisée pour des séances de cinéma, a été tranformée en un théâtre de places qui recevra des compagnies ambulantes et a ainsi reçu un nouvel influx.

Eine in Amfang dieses Jahrhunderts gebaute Versammlungshalle die später als Kino benutzt wurde, ist vor kurzem als mehrzweckige Halle umgebaut worden, hauptsächlich für Theatervorstellungen. Bühnenbeleuchtung von System Memocard.

America in London

Dans ce numéro international de TABS, Percy Corry s'intéresse à l'infiltration américaine en Grande-Bretagne. Prenant comme exemple le Théâtre James Hull Miller de 300 places de l'école américaine de St. John's Wood, il explique quelques-unes des idées de Miller: intégration de la scène et de l'auditoire, de l'architecture et du décor, considérations qui ont dû l'influencer.

In dieser internationalen Ausgabe von Tabs', betrachtet Percy Corry die amerikanische Invasion Grossbritanniens in der Form eines 300 Sitze fassenden, von James Hull Miller gebauten Theaters in einer Schule für amerikanische Kinder in dem londoner Bezirk St John's Wood. Er erklärt Miller's Ideen über Vereinigungsmöglichkeiten zwischen Bühne und Zuschauerraum Architektur und Dekor, die ihn bei dem Entwurf des Theaters vorgeschwebt haben mögen.

A Software Theatre

Dans une université comme l'Institute for the Arts en Californie, la question des frais de main d'oeuvre ou de la grandeur de l'auditoire est secondaire pour le théâtre. La "black box theory" peut être pleinement appliquée dans ce qui est pratiquement un centre d'études des relations acteurs/auditoire.

In einer Universität wie The California Institute for the Arts, braucht man sich im Theater weder um Arbeitskosten noch Anzahl der Zuschauer zu sorgen und kann sich daher leisten, der "BlackBox Theory" im vollen Masse nachzugehen. Das Theater stellt praktisch ein Versuchslabor dar, für Forschung in das Verhältniss zwischen Schauspielern und Zuschauern.

Le Grand Théâtre de Québec

Suite à un concours d'architecture au Canada, un complexe de deux théâtres et d'un conservatoire de musique a été construit à Québec. Le plus grand théâtre, de 16–18,000 places, est utilisé pour les opéras, les pièces dramatiques, les concerts, etc. Le studio adaptable plus petit, de 400–900 places, sert pour les pièces dramatiques, la musique de chambre, les récitals. Cet article écrit par l'architecte Victor Prus a été traduit du français et le texte original peut s'obtenir auprès de M. Michel de Courval, 269 est Boulevard St. Cyrille, Québec, Canada.

Ein Wettbewerb, an dem Architekten aus ganz Kanada teilnahmen weist als Resultat einen Komplex zweier Theater und eines Musikconservatoire auf. Das grössere 16–18,000 Sitze enthaltende Theater wird für Dramen, und Konzerte benutzt, das kleinere, mehrzweckige Studio ist für Dramen, Kammermusik und Vorträge bestimmt. Der eindrucksvolle Originalartikel, auf französisch von dem Architekten Victor Prus geschrieben.

Compromise

L'agrandissement du Kings College a permis la construction d'un théâtre à double usage (drame et salle de cours) au Strand, rue bien connue à Londres. La salle de 320 places fait face à un proscenium, avec un gril complet, ou à un "tableau noir" abaissé pour les cours. Bill Nicholas, un des étudiants du collège, rappelle ici quel a été le succès remporté par ce compromis.

Die Vergrösserung des Kings College ermöglichte den Bau eines zweizweckigen Drama und Vorlesungstheater in der bekannten londoner Strasse The Strand. Dem 320 Sitze enthaltenden Zuschauerraum schliesst sich eine Prosceniumbühne an, mit richtigem Schnürboden, oder aber eine "Lehrwand" die sich auf die Prosceniumlinie herunterwinden lässt. Bill Nicholas, der schon mehrere Jahre lang dort studiert, berichtet, mit wieviel Erfolg dieser Kompromiss zu stande gekommen ist.

This Blessed Plot

Francis Reid, ayant renié le dessin d'éclairage du West End Theatre en faveur des bateaux et du jeu d'orgue du théâtre à Norwich, relate les hauts et les bas d'un plan d'éclairage un lundi soir.

Francis Reid, der den Entwurf von Bühnenbeleuchtung verlassen hat, und sich stattdessen mit Schiffen und Beleuchtunssteuerung in Norwich befasst, beschreibt die Kaffeeflecken und Seufzer, die den Beleuchtungsplan eines schönen Montag abends begleitet haben.

Variable Geometry at Stratford

La nouvelle scène du Royal Shakespeare Theatre, à Stratford-upon-Avon, mentionnée dans le dernier numéro, a suscité un grand intérêt. Bill Nunn, de IES Projects Lt., décrit ici en détail sa conception et construction, ainsi que le mécanisme de la scène.

Die neue Bühne im Royal Shakespeare Theatre in Stratford upon Avon welche in der letzten Nummer von "Tabs" erwähnt wurde, hat viel Interesse erregt. Bill Nunn, Mitarbeiter bei IES Projects Ltd., beschreibt hier ausführlich deren Plan, Bau und Steuerung.

Mirror, Mirror through the Wall

Pour permettre la présentation de films le dimanche ou pendant de courtes périodes, sans affecter les représentations théâtrales, le "Piccadilly" dans le West End de Londres a installé un nouveau système de projecteurs. Allié à un arrangement périscopique de miroirs, l'image est projetée sur l'écran à l'angle approprié; de son côté, le projecteur peut être monté latéralement et gardé hors de la vue dans la toiture.

Das Piccadilly Theater in London's West End hat neue Projektions-apparatur installiert, damit es ohne Störung als Theater funktionieren kann, und zur gleichen Zeit sonntags und für kurze Aufführungsserien Filme spielen lassen kann. An hand von periskopsich angeordneten Spiegeln ist es möglich, dass das Filmbild die Leinwand im richtigen Winkel trifft trotzdem der Projektor selbst seitwärts einmontiert ist und auf dem Dach untergebracht ist.

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