

TABS

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EDITORIAL

Some despair is felt at the mistakes made or likely to be made when building new theatres of all kinds, whether the local hall on the one hand or a full-sized opera house on the other. The self-centred genius or the ignoramus are an equal menace and many look to the ABTT (Association of British Theatre Technicians) to provide the answer. Inevitably they work by committee and we feel that a warning note from the past will not come amiss.

When Isambard Kingdom Brunel, the engineer, was asked in 1848 for his views by the Royal Commission on the Application of Iron to Railway Structures, he said: "If the Commission is to inquire into the condition 'to be observed', it is to be presumed that they will . . . lay down, or at least suggest, 'rules' and 'conditions' to be

observed in the construction of bridges, or, in other words, embarrass and shackle the progress of improvement tomorrow by recording and registering as law the prejudices or errors of today."

The Brunel quotation is taken from the biography, Isambard Kingdom Brunel, by L. T. C. Holt, Published by Longmans.

Lectures

To be given at the Strand Electric Demonstration Theatre. Admission is by ticket only, obtainable free on application, enclosing a stamped and self-addressed envelope, to 29 King Street.

Wednesday April 17th, 7 p.m.

"Basic Stage Lighting 1963"

Talk by Frederick Bentham with demonstrations.

Wednesday April 24th, 7 p.m.

"Recollections and Reflections" by Basil Dean, C.B.E.

This paper originally presented to the A.B.T.T. last Autumn is an absorbing mixture of personal experience and humorous anecdote.

Wednesday May 8th, 7 p.m.

"Light on Stages"

Recorded Lecture No. 3, Stephen Joseph, Percy Corry and Frederick Bentham, with opportunity for discussion afterwards.

Thursday May 23rd, 7 p.m.

"Planning and Lighting the Stage"

Recorded Lecture No. 2 (new edition). Percy Corry and Frederick Bentham, with opportunity for discussion afterwards.

"Lighting the Scene"—New Recording

The tapes of Recorded Lecture No. 1 have been in continual use since it was introduced 5 years ago. Now an entirely new master tape has been prepared by the original team—William Lorraine and Frederick Bentham—joined this time by Percy Corry. The slides with two or three exceptions remain the same but the commentary has been brought right up to date and gives a unique insight into the technique of the lighting rehearsal. Information regarding the loan of this and the two other recorded lectures is obtainable from 29 King Street.

Package Deal

It has often been stated in the pages of TABS that lighting cannot be considered in a vacuum. That it has no existence except when it strikes the actor and his setting, or in some forms of modern theatre, if we are unlucky, members of the audience. In a proscenium stage the setting is in fact under control, or should be. Therefore it is possible not only to use it to provide the actor with a locale, but also to use it in the role of a reflector or absorbent of light to aid and abet the lighting. All this is another way of saying that it is impossible to disregard the setting when planning a stage lighting installation. Either one must imagine the settings likely to be used one day, or

more often than not, in the case of the school stages, one must cope with the semi-permanent setting of draperies supplied or about to be supplied by another. Thus it is that a stage may have a complete curtain set of legs and borders which may not only not assist the lighting but positively hinder it. As the Hampstead Civic Theatre shows (in this issue), sometimes the fewer the curtains and borders the better.

For many years the north of England has been in the happy position of finding that the manager of Strand Electric, Manchester, is the selfsame person as the managing director of the leading curtain and stage equipment firm up there—namely, Watts and Corry. Not only co-ordination but a complete package deal is therefore easily arranged. The package deal is to be applied to the whole of the U.K. The firm supplying and fitting the curtains will vary to ensure good service over the wide area, but Strand Electric will design and be responsible for the whole as one package deal. In this way it is hoped to ensure that the latest developments in staging and lighting can be passed on with minimum trouble. Where the customer wishes to continue to deal separately with his own curtain and equipment supplier we shall be only too pleased to co-operate as before.

Letters to the Editor

January 9th, 1963.

DEAR SIR,

Over the past several years I have been pulling together records concerning the Fortuny lighting system. In the various articles and correspondence I have had there have been repeated, vague references to installations of this system in England. I would like to run these down if at all possible and it would seem that you might be in an excellent position to suggest the best course of action for me. The latest reference is on page 9 of the December, 1962, TABS in the article by Basil Dean. Even here, however, it is not clear whether the system was actually installed at Birmingham or not. I would be most appreciative of any direct help or suggested contacts which you might give me in this long distance search.

Most sincerely,

DAVID L. THAYER,

Lighting Director, University Theatre, Iowa City.

January 23rd, 1963.

DEAR SIR,

Thanks for your letter and copy of letter from Mr. Thayer, of the University of Iowa, enclosed.

Yes, the Fortuny System was installed in the Birmingham Repertory Theatre under the supervision of Italian engineers when it opened in 1913, and remained in regular use until some time during the First World War, when difficulty was experienced in obtaining supplies of the special carbons required for the automatic arcs, the initial supply of which had been imported from Italy. The System was finally dismantled after the war.

Yours sincerely,

St. John's Wood, N.W.8.

BASIL DEAN.

NEW LANTERNS

The Strand Electric policy of recent years has been to manufacture, using mass production techniques, a rationalised range of lanterns and other equipment for stage lighting. Each of these lanterns must be as versatile as possible, such versatility being both built in as facilities initially and extended by attachments—changes of lenses, etc.

Outside the rationalised catalogue range Strand Electric are prepared to supply specials, but of course as specials they will cost more than the standard units.

The standard range of lanterns consist, on the one hand, of Fresnel soft edge spotlights, and on the other, profile (hitherto known as "mirror") spotlights. Until now there has been a marked gap between the 250–500-watt size of both of these (Patts. 123 and 23) and the 1,000–2,000-watt size represented by the Patt. 243. On the profile side there have been no 2,000-watt lanterns and the 1,000-watt lanterns have been represented by hangers from earlier days in the shape of the Patts. 53 and 93.

This summer the rationalisation will become complete with the addition of a 750–1,000-watt Fresnel, Patt. 223, and two Profile spots, Patt. 263, 750–1,000-watt, and Patt. 253, 1,000–2,000-watt. It will be noticed, however, that rationalisation does not extend to the Pattern numbers!

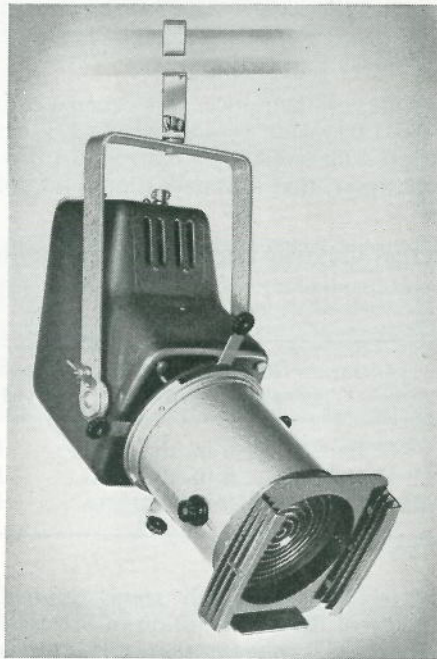
This means that the basic range of lanterns can be tabulated as follows:

	Soft edge (Fresnel) spots	Profile hard edge (Mirror) spots
250–500-watt	Patt. 123, 6 in. dia. lens	Patt. 23
750–1,000-watt	Patt. 223, 8 in. dia. lens	Patt. 263
1,000–2,000-watt	Patt. 243, 10 in. dia. lens	Patt. 253

At first sight six spotlights only seems rationalisation with a vengeance, but study of the latest edition of the catalogue (*Lighting for Entertainment*, 1963) shows that the standard variations produce no less than 23 different lanterns as far as usage and light distribution is concerned. In saying this, one is ignoring the additional fact that each lantern variation itself provides a widely adjustable beam. Right outside the basic range there are also floods, optical effects projectors (Patts. 52 and 152) and the Junior spot (Patt. 45), etc. The new 263 Profile spot (used in the production

of *Blitz* at the Adelphi Theatre) is remarkable as it marks the first use in this country of a projector lamp made to burn cap-up in a stage lantern. These have been common in America since the early 1930s and have been getting more and more compact and more efficient.

It has been difficult to interest lamp manufacturers over here in their manufacture, but at last the most recent form of these cap-up burning lamps, the 1,000-watt in a bulb of $1\frac{1}{2}$ in. diameter is to be made here. The advantage of this source is that it leads to a very compact optical system and thus a very neat lantern results. The Patt. 223 Fresnel is of great interest because it has such a wide beam angle (60°) in the fully open position. At a time when it begins to be logical to use Fresnel spots instead of floods for cyclorama and background lighting this lantern should prove to be very suitable for this task.



1000-watt Profile Spot Patt. 263.



Fig. 1. Ashcroft Theatre stage and forestage.

THREE NEW THEATRES FOR LONDON

by Frederick Bentham

The end of 1962 saw London, or rather Greater London (though Croydon is but 15 minutes by train), with three new theatres: the Ashcroft, the Prince Charles and the Hampstead Civic. They make an interesting contrast to the four northern theatres described in the last issue of *TABS*. The three London theatres could not differ from each other more. The Ashcroft forms part of an impressive entertainment centre, known as the Fairfield Halls, built by the Croydon Corporation. This arrangement bears no resemblance to the usual prestige town hall with its bi-annual symphony concert and a flat floor only suitable for dancing, but with which the local amateur dramatic societies have to make do. The two main halls at Croydon are designed as a theatre and a concert hall respectively and the photographs indicate the grand scale of the operation. For this country the whole thing is quite remarkable and the fact that most German towns and cities have both a large opera house and a theatre, as a matter of course, must not be allowed to blind us to the Croydon achievement.

Speaking personally, I think the photographs of the Ashcroft theatre show that we have some distance yet to go to establish in modern architecture a feeling of theatre. Modern architecture seems good for concert halls but bad for theatres and I wonder why. I am



Fig. 2. Ashcroft auditorium with lighting slot on right.

Fig. 3. Fairfield Hall, Croydon's new concert hall.



Fig. 4

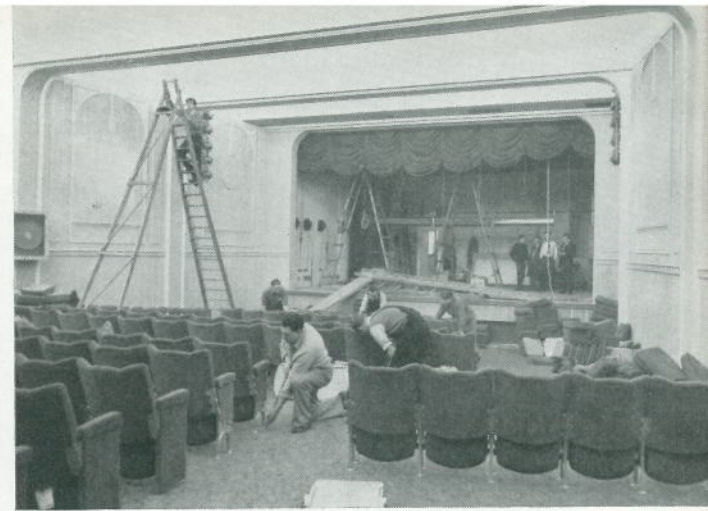


Fig. 5

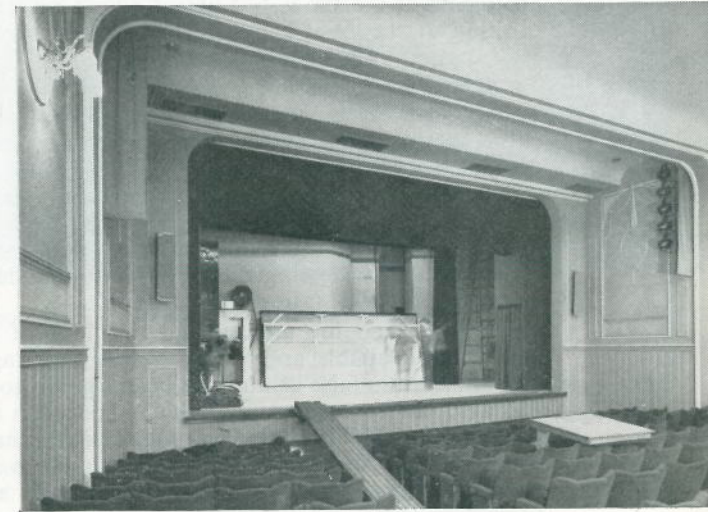


Fig. 6



Three views of the Prince Charles Theatre, London.

not overjoyed to learn that the concert hall possesses a proscenium stage fit-up similar to the Royal Festival Hall. Presumably this is an attempt to provide a replacement for the Davis Theatre, which is no more and which allowed Croydon in its thousands to enjoy visits by the Royal Ballet and the Covent Garden Opera. However, such a fit-up is preferable to ruining the adjacent theatre for its normal purposes by making it large enough to take grand opera or a full ballet.

The Ashcroft theatre seats 750 and the concert hall 1,950. An interesting side feature of the set-up is the fact that, although the two halls have their own remote control systems (96 channel and 72 channel system PR electro-mechanical preset), the dimmer banks share the same dimmer room. The control desks are in the projection rooms at the back of the two auditoriums. Personally, I do not like to be so far away and so high relative to the lighting I am operating. In large halls I would swop for a poorer side view nearer to, and more part of the show, but not of course on the stage. The control position at the right-hand end of the stalls in the Royal Festival Hall is good except for size.

The Prince Charles is a small West End theatre seating 420. The site is very cramped and is at the bottom of an office and club block which is part of the same enterprise. The wall of the circular church of the Notre Dame de France governs the theatre wall on actors' left and makes some space up-stage as it curves away. This compensates for the right-hand wall, which is determined by the line of Lisle Street and, as the photograph shows, encroaches on the stage right. The dressing rooms are accommodated under the stage and access is by a staircase up-stage left.

There is no fire curtain and the floor of the premises above makes the available auditorium height and stage height the same. The auditorium false ceiling and beams give a good lighting position, but with ladder access only, which shows top right in Fig. 6. The stage is masked by borders, and a false proscenium has been built for the opening production and this can be seen in Fig. 5. The lighting bars are raised and lowered by winches, actors' right. Other suspensions, etc., terminate in a cleat rail at stage level, actors' left.

The lighting control is a 72-channel Strand system LC with a preset desk sited in the projection room to give the operator a good view through the aperture on the right of Fig. 6.

The third of the theatres is the Hampstead Civic and this is so small—only 160 seats—that it provides a sharp reminder of the great range covered by the word *theatre*. For this is certainly beyond question a theatre with all the atmosphere of a theatre. The total cost of only £16,000 brings this enterprise within the reach of, so to speak, a much wider market and therefore I propose to treat it rather fully. It is a professional, but club, theatre and the high standard of production can be judged by the enthusiastic notices on *The Seagull* in the press. Other aspects of this remarkable venture were covered in



Fig. 7. Hampstead Civic Theatre, stage from auditorium.

New Theatre Magazine of October–December 1962, and the *Illustrated London News*, January 12th, 1963. Altogether James Roose Evans, the Director, is to be congratulated. The shell of the theatre was designed by A. D. Gough, A.R.I.B.A., of Ian Fraser and Associates, and this is what most concerns us, for here to my belief is not only the remarkable solution to the Hampstead problem but the solution to the school theatre.

It is easy to say, as some have, that this is a small Mermaid. Simply because the seats are in one tier, the stage is very low and there is no proscenium, but this is far from the truth. Whether the Hampstead form would have happened without the Mermaid is questionable, but it brings its own individual solution. The difference arises not unnaturally from size. As the theatre is only 31 ft. 8 in. wide and 19 ft. 6 in. high, from the stage to ceiling, the kind of semi-naturalistic constructive set on which the Mermaid's open stage seems to thrive is out of the question. The concentration by lighting



Fig 8. View of auditorium from stage of the Hampstead Civic Theatre.

on either this area or that, or this level or that, and the interplay between them requires the wide open spaces*. Even the 34 ft. 6 in.-wide proscenium stage at Her Majesty's seems confining for productions which originate at the Mermaid. At Hampstead, scale insists on its own solutions and I imagine balconies and the like will seldom appear; they are the nightmare of the large-appearing but in reality small stage.

What Hampstead can do very well on its open stage and what makes it a new solution is—scenery! What is more, it can be naturalistic, jolly realistic stuff! One can almost hear the disciples of “vital theatre” groan and mutter “betrayed”. Yet it is perfectly true that this open stage, without any proscenium and without any overhead masking or real wings can, when required, present fully satisfying scenic backgrounds—a full box set if necessary—with no suggestion of makeshift. The possibility is there and can be disregarded if desired, but whether there is to be scenery or no scenery is optional and the decision is not forced on one as *in-the-round* and most open-stage forms. It is the form of theatre which makes this possible, not its size. To put in even a token proscenium would have been to provide all the old obstacles of no wing space, no height and consequent multiple borders and lighting problems. The stage is very low, a single step high, and as there are no overhead masking beams

* Mermaid stage is approximately 50-ft. wide.

or borders the full height of the building is available in the stage area.

It follows, of course, that the seating must be and is stepped. The 8 in. risers could with advantage be steeper, but as it is the sight lines are much better than the stalls in most theatres. The theatre walls are dark but **only the framing beams** are really black. The ceiling over the audience is in a lacquer yellow and the tip-up seating is a red. The auditorium appears properly finished and dressed to receive an audience. There are some who complain that today's audiences are not properly dressed, but my goodness, what about the theatres—not only the hard-up Little theatres and the must-be-down-to-earth experiments, but the West End theatres? Bare bulbs in the decorative fittings, to say nothing of the clutter of Strand Electric ironmongery, hardly encourage a sense of occasion.

Over the stage itself at Hampstead, the ceiling is painted black and this, plus the tendency of the audience to look down (because the stage floor is very low) gets rid of overhead masking difficulties. There is no masking and everything is in view and causes no concern. The lighting, which on a proscenium stage seems such an affectation when exposed, is completely accepted here. The lanterns hang on barrels rigidly fitted to the beams and give plenty of lighting positions.

There is a front curtain to this open stage, but when open one would never suspect it as it disappears up the sides of the stage instead of the usual bunching at the ends of the tab line which suggests a vestigial proscenium. When the tabs are open the stage is truly open and part of the auditorium. However, the presence of a front curtain, I think the word “tabs” would be wrong as it is too evocative of the normal house tabs, allows real scene changes when required. As the photographs show, a chamber set can be enjoyed without any sense of peering through the fourth wall. The audience are in the room among the action in the way claimed for theatre-in-the-round, but not achieved for this writer due to the intrusive surrounding audience. With suitable scenery a theatre world is presented wide open to us at Hampstead.

It would be unfair if, in paying tribute to the intimate form of the theatre at Hampstead, one did not recognise what it owes to its size. Often the intimacy of theatre-in-the-round is attributable only to its small size and not its form. Small size, when one does not ape a West End theatre proscenium and therefore run into the conflict of large material confined in a small frame, automatically provides intimate theatre. Small size is not possible in a professional theatre and one wonders how Hampstead Civic is going to finance itself with such a small seating capacity. It may involve too great a sacrifice from those who work there. It is quite another thing for amateur and school theatre. The real fun is to give several performances to small but not sparse audiences and not just one or two to a large audience. The Hampstead Civic theatre shows one the perfect school theatre

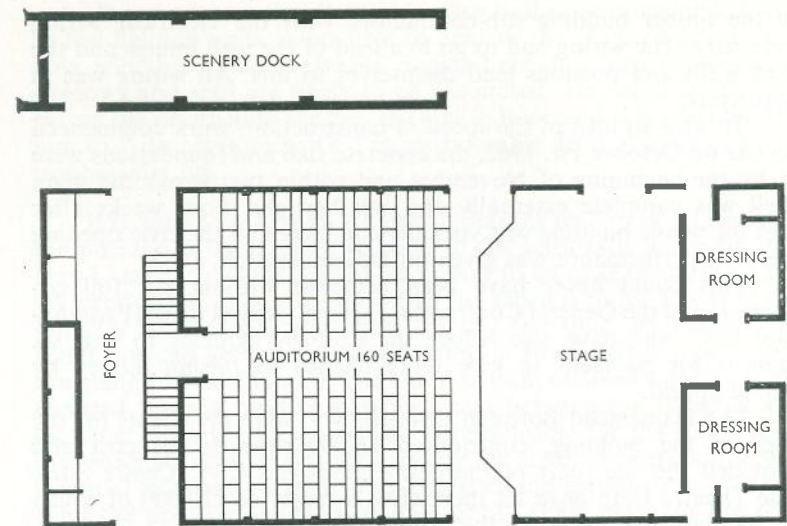
shape and size. A practical low cost proposition and an indication of how to disassociate the drama from the echoing acres of flat floor monumentality of the assembly hall. Here is an intimate theatre which in a school would double solely as a lecture theatre. Here is a form to encourage, instead of daunting, immature actors and immature audiences. Here the crafts of scenery and lighting can also be displayed using simple, within reach, resources. Here also the scientific aids to education, film and television, can be freed of classroom makeshift. Surely every school needs a lecture theatre and every school certainly needs a theatre. Here is a form which could play this double role without the slightest sense of makeshift or of financial extravagance.

NOTES ON CONSTRUCTION OF HAMPSTEAD CIVIC THEATRE

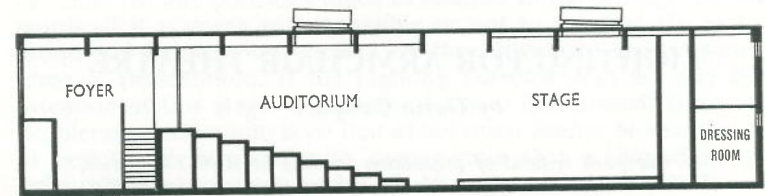
by *A. D. Gough, A.R.I.B.A.*

The theatre consists of two separate buildings, the main one being the theatre itself with foyer, complete with bar, cloakroom and box office, and dressing rooms and of course auditorium, seating 160 persons, and stage. The other building, which is of brick construction with an asbestos roof on timber joists and purlins, contains the scene dock where scenery is painted and stored and the members' lavatories. It is hoped eventually that there will be a covered way between the theatre and the ancillary buildings.

The prefabricated timber theatre building is carried on reinforced concrete ground beams which have mass concrete bases at 12 ft. centres bearing on solid clay about 4 ft. below ground level; there is a mesh reinforced ground floor slab. A hardwood site cill is bolted to the perimeter of the slab and the timber columns and wall panels are located and bolted to this. Plywood-faced laminated beams span 31 ft. 8 in. clear between the columns which are at 6 ft. 4 in. centres. The whole building is planned on a 6 ft. 4 in. square grid, although some portions are on a half grid which is possible without special modifications. External facing is in vertical cedar boarding with contrasting plywood panels treated with black "Arpax" paint. The cedar boarding is treated with two coats of "Watertite". Internal wall linings are $\frac{1}{2}$ in. asbestolux, which was insisted on by the L.C.C. for fire reasons, although the columns and beams are expressed internally. The building is 69 ft. 8 in. long \times 31 ft. 8 in. wide and 19 ft. \times 6 in. high internally. Because of the height it was possible to include a mezzanine floor in the dressing rooms and also a small control room over the main entrance in the foyer, with observation panels giving a view of the stage. There is an intercom system between the control room and backstage.



*Plan and Section,
Hampstead Civic Theatre.*



The stage itself is on softwood bearers and the finish is maple strip flooring. The auditorium is ramped in 8 in. steps with the seating supported on T. & G. boarding on 3 in. \times 2 in. joists supported in turn on 4 in. concrete block sleeper walls. The dressing room fittings are of softwood framing with blockboard shelves. The foyer staircase up to the highest auditorium level is constructed in Sapele. The bar, cloakroom, box office fittings is all in softwood with blockboard shelves and plywood panels.

The exposed structure internally is painted with an eggshell black paint. Other timber has a clear polished finish, while doors, panels, etc., have a gloss finish. All walls are emulsion painted. Colours are black, white, dark green-grey, bright orange and mustard yellow, with the natural timber as a foil.

One problem encountered because of the specialised nature of the building was the difficulty of the electricians trying to keep ahead

of the timber building sub-contractors with the electrical wiring necessary. The wiring had to go in ahead of the wall linings and the stud walls and portions lend themselves to this. All wiring was in pyrotenax.

To give an idea of the speed of construction, work commenced on site on October 1st, 1962, the concrete slab and foundations were in by the beginning of November and within two weeks the main shell was complete externally and weathertight. Four weeks after that the whole building was virtually complete and the civic opening and first performance was given on December 16th, 1962.

This could never have been achieved without the full co-operation of the General Contractors, Messrs. Russel Bros. (Paddington) Ltd., who have also helped the Club by agreeing to wait six months for payment to give more chance of raising money by public appeal.

The Hampstead Borough Council, who were my clients for the shell of the building, contributed £6,000 towards the cost and provided the site (part of the new Hampstead Civic Centre Site). The Theatre Club have set themselves a target of £10,000 of which £3,500 had been raised by the opening date.

* * *

LIGHTING FOR ARMCHAIR THEATRE

by Gavin Campbell

Mr. Campbell is head of production services at ABC TV studios, Teddington, and was responsible for lighting their television productions since their inception until his present appointment in 1961. Particularly noteworthy is Armchair Theatre and we thought that TABS readers would be interested in, and might perhaps learn from, the very efficient lighting technique which he initiated.

Although the technique of a television Lighting Director is derived partly from the theatre and partly from film, he has a number of problems which are unique. First, he has to light from all sides as the cameras are working simultaneously from any direction on the set and are not conveniently located in one place like an audience in a theatre or a film camera for its particular shot. Secondly, he has to light in such a way that shadows from the obtrusive microphone boom are not thrown into the picture area; and thirdly, and most important of all, he must light to suit the contrast range of the television camera. Above all, however, he is part of the production team in a television studio where time is as important as money and he must therefore light the show between given hours—or otherwise he will be taking up valuable rehearsal time and disturbing the completion of the production.

He soon learns that it pays to plan well in advance and to use as few lighting units as possible to achieve the required effect. Not only will this reduce valuable rigging-time, but also problems of shadows and spill are likely to be minimised. His work starts long before the production reaches the studio floor and it is essential for him to “do his homework” in considerable detail if he is to avoid trouble later on.

It is during the homework period that the real art of establishing the position of lanterns in relation to the settings is achieved, and here I hasten to add it is most important to be in at the birth of any TV production, that is to say, when the script is in the hands of the Director of the particular show for the first time. By reading the script one can get a very quick picture of the different moods that are going to be demanded, but one's first impressions can be greatly changed when a meeting has been held between the Director and Designer. It is the Designer who is responsible for the solid three-dimensional pictorial settings, and by the close co-operation that is essential between Director and Designer the settings are made to fulfil the practical demands of the script. These demands are then interpreted into camera angles, and simultaneously at this time the settings and camera angles are being analysed by the Lighting Director. It is at this stage that the Lighting Director must say “yes” or “no” to any decisions made in relation to the settings; in other words, if it is going to be possible or not to produce the various moods of lighting appropriate to the Director's and Designer's ideas of presentation. If the Lighting Director does not pay close attention at this stage of planning he may find himself faced with problems on the studio floor that at the worst cannot be resolved and at best result in a make-do compromise that is bound to give inferior pictures.

We have established, therefore, that it is essential for the Lighting Director to work in close liaison with the Designer, each advising one another where necessary. At the same time both must be aware of the technical problems that are going to be encountered, of camera angles and mike boom positions, and therefore both Designer and Lighting Director will be in attendance at what is known as a “Technical Meeting”, which is normally chaired by the Director in question. The technical departments are often represented at such meetings by a person known as an Operations Supervisor, who will guide all concerned as to the technical demands ensuring that the camera and sound department have a fair chance of carrying out the complex movements demanded by the Director. These will be gone over on the Designer's floor plan, which shows all the sets laid out in $\frac{1}{4}$ in. scale, and has plottings of camera, sound and lighting positions. At a later stage all concerned, especially the Lighting Director, will attend a “cold” rehearsal, enabling them to see precisely the various movements of artists within the settings. It is

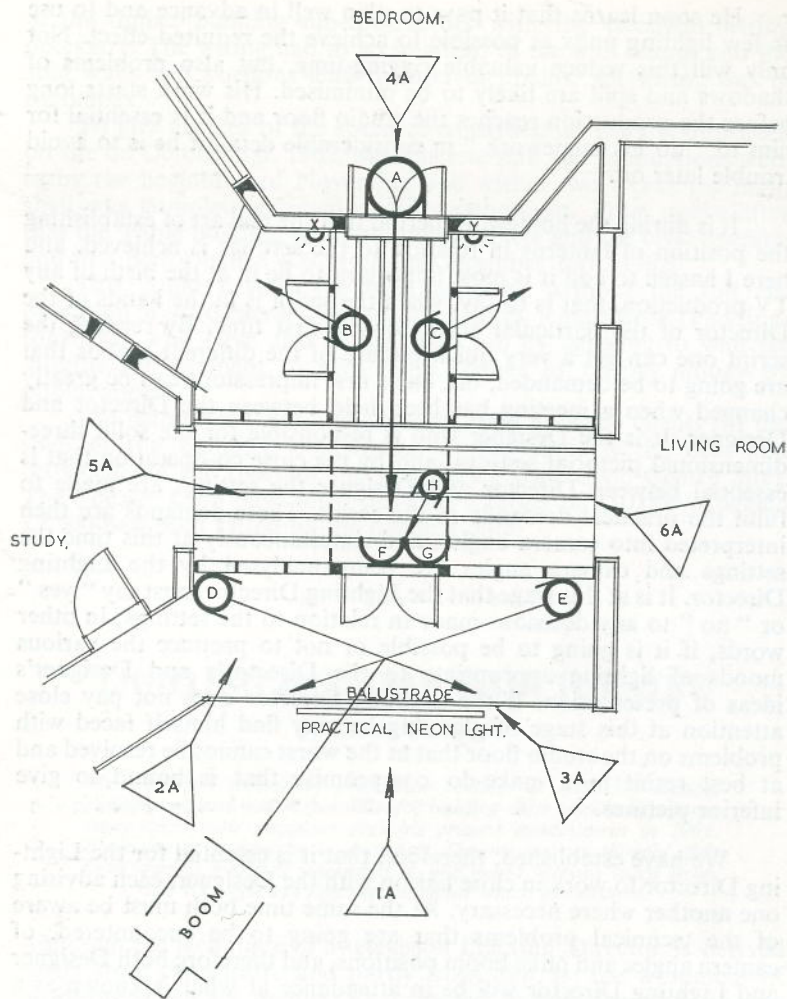


Fig. 1. Plan of the roof-garden part of the "Blue and White" set showing camera positions (triangles) the microphone boom and the lighting positions A-H. (Photo by ABC TV).

at this stage that the Lighting Director can go away and plot the layout of his lighting, which will be superimposed over the Designer's settings on a print of the studio plan.

This is the most crucial part of the Lighting Director's work in any production because this lighting plot in due course is given to the Studio electricians, whose job it is to interpret all the requirements and make ready the physical lighting rig with or without the

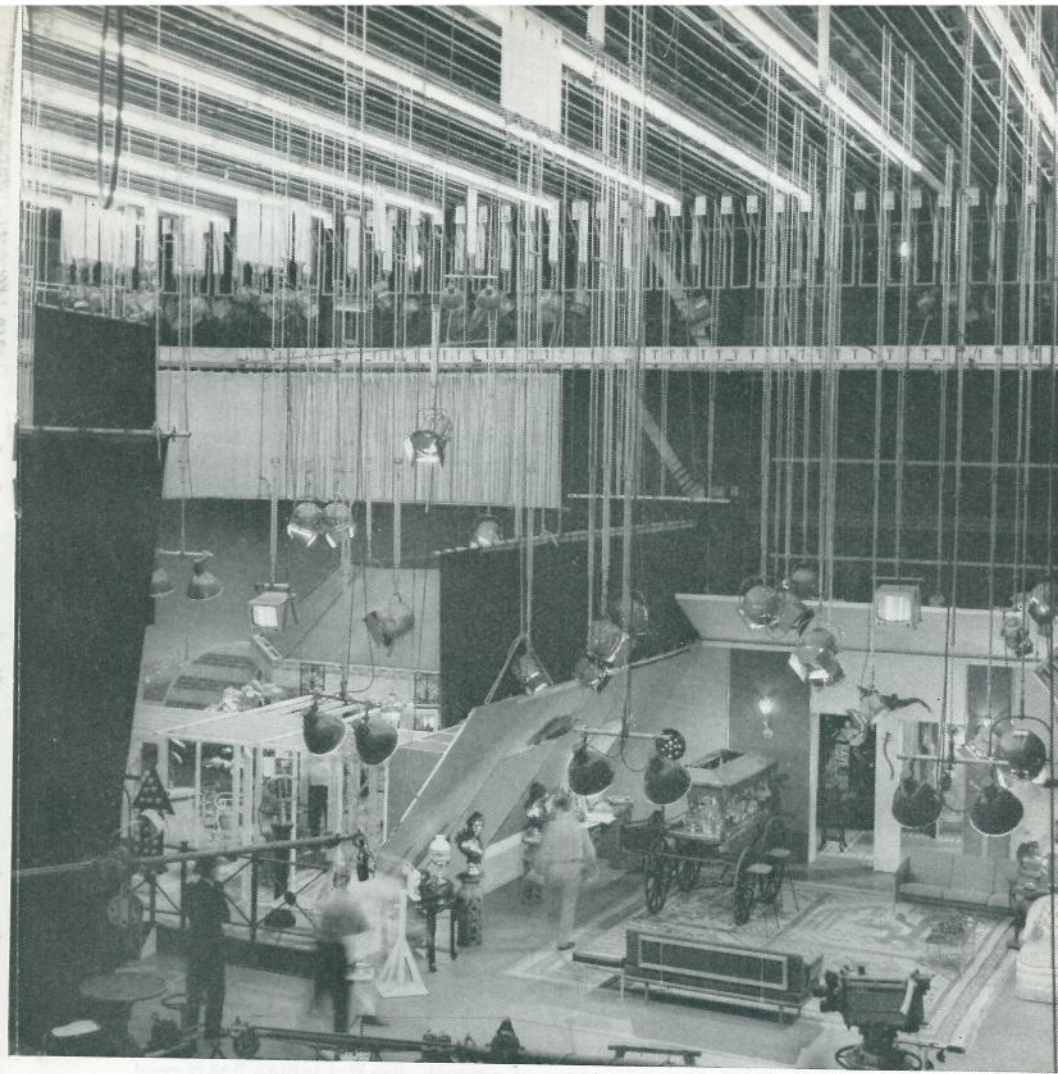


Fig. 2. A general view of the studio (with working lights on) showing the roof-garden to the left of the picture. (Photo by ABC TV).

Lighting Director present. There is always a senior electrician in the form of the Charge Hand, to lead a crew of three to five men to rig a drama. I hasten to add that this labour force, although not large in number, is highly specialised and they are regular staff, working very closely with known Lighting Directors. As a result, they become a well-knit team capable of interpreting different Lighting Directors' techniques and wishes without him being present. This is very unlike the film world, where there is a mass of labour, skilled yes, but not necessarily familiar with the habits of the Lighting

Cameraman, as both he and the electricians are in the main employed on a free-lance basis. This, to some extent, applies to the stage as, although the theatre's manual staff are fairly permanent, the people that light the show are often working on a free-lance basis.

I would like to give you an example of how important it is to the Lighting Director to have such a team available.

He has, for instance, presented his lighting plot to the Charge Hand, but cannot be present during the initial lighting rig. The rig proceeds but comes up against a physical problem (such as a last minute alteration to the sets), which does not allow a lamp or a number of lamps to be positioned as indicated on the lighting plot. This team would not just leave the situation in abeyance until reference could be made to the Lighting Director, but they would organise themselves in such a way as to overcome this eleventh-hour problem by making alterations which may not be ideal but would at least save a lot of time when the Lighting Director starts making a balance of illumination just prior to the start of the camera rehearsal.

It can be said, therefore, that the essential requirement of any television Lighting Director is firstly to be able to "place the lamp of his choice at the point in space where he wants it with the minimum of effort", and secondly to have available a small efficient team who can interpret his directions quickly and carry them out with the least amount of effort and commotion. For the purposes of the rest of this article let us assume that the amount and type of equipment, the latest methods of lay-out and installation are such as to give the Lighting Director no physical problems whatsoever!

To illustrate, therefore, a practical example of lighting for television drama I have taken a recent play recorded for the well-known ABC TV series, "Armchair Theatre". This production is called "Blue and White" and was produced in our new Studio 1 at Teddington, taking up just over half the Studio area, that is to say, approximately 4,000 sq. ft.*

The section of the settings that I wish to illustrate in detail portrays part of a composite set of a penthouse flat which has a roof garden surrounded by various rooms of the flat, as shown in both the ground plan (Fig. 1) and photograph (Fig. 2). The mood of lighting required by the script is that of late evening, and therefore the first problem is to light this area in low key. Secondly, points X and Y (Fig. 1) indicate two powerful wall lights, which were practical and therefore, in the main, dictated the direction of illumination. Apart from these two practical lights, the script demanded that the adjacent interiors of the flat be lit, and therefore further illumination of this area would be caused by light coming through windows and door-

* The stage of a medium-sized theatre such as the New or Saville is roughly 900 sq. ft.

ways. There was one other light source required by the script, a practical illuminated sign (shown in Figs. 1 and 3). Therefore, the Lighting Director wishing to indicate reality would have carefully to consider the positioning of his Studio lamps because, apart from the script demands, there are all the other problems relating to the planned camera angles that would be taken during the course of action of the play, typical camera angles being shown in (Fig. 1). The problem of the microphone boom to pick up the necessary dialogue from the two artists photographed in this area had to be considered and this is also indicated in the plan (Fig. 1).

The area taken up by this main part of the settings is approximately 480 sq. ft. and, apart from the practical lamps built in the illuminated sign, a total of eight studio lamps were used suspended on telescopes at various heights. Let me deal first with the major lamp, a 5 kW Spot, in position "A" (Fig. 1), which served two purposes: firstly, to give the impression that the two practical lights X and Y positioned either side of the double doors were illuminating the majority of the area; and secondly, to give the impression that the electric light within the bedroom was switched on and shining through these double doors. This lamp in itself practically covered the whole set, but was augmented with the two 2Ks (marked B and C) which were directed in a downwards direction illuminating the area either side of the double doors, here again indicating, so far as reality was concerned, that the light source was coming from the two practical lamps. To soften the extremely hard shadows caused by these 5K and 2K spots, two 1,000-watt scoops as soft light sources were positioned at F and G. The purpose of these two lamps was purely to lift up all shadow areas and to bring the lighting contrast down to a closer ratio between highlight and shadow. Another pair of 2Ks, marked D and E, were used to enable the necessary low key close-ups to register in the main acting area. There were only two artists involved, but they played a fairly intimate scene in the area just behind the illuminated sign (Fig. 3). The sign itself had to be practical, which meant setting up the **necessary switching equipment to make the sign flash section by section. Connected in parallel with each section and positioned at the rear of the sign were 150-watt internally silvered bulbs directed to give the effect of the sign flashing on to the artists, especially for camera angle 1A.**

The use of one other lamp, marked H in Fig. 1, a 500-watt "Pup"**, was to concentrate back lighting on one artist who was seen in close-up in the area illuminated by this lamp from camera angles

** Pup = Baby Fresnel Spot. All spots in television with few exceptions are Fresnel type but the other sizes tend to be referred to familiarly by the wattage as 2K or 5K for example.

Figs. 3, 4, and 5. Three views of the "Blue & White" roof-garden scene. (Photo by ABC TV).

1A and 2A. The sound boom worked between camera angles 1A and 2A very successfully, the microphone being kept at least 6 ft. 9 in. from the Studio floor; this was agreed in the planning stage because the "observatory" part of the roof garden was built to this height.

The whole production used over its 4,000 sq. ft. of floor area a total of 74 lamps made up of: 1 5K Spot, 23 2K Spots, 24 500-watt "Pups", 16 Scoops (1,000-watt bulb) 10 Four-lights (each with four 500-watt photo-flood type bulbs).

It is worth remembering that all this equipment is rigged and roughly set by the electrical team to the plan of the Lighting Director overnight, so that at 9 o'clock he can come in and do the final setting from the floor and run through at 10.30. From then on he is likely to operate from the switchboard (Fig. 6) (with talk-back to the floor) to balance the light as seen on the picture monitor before him by using the dimmers. The whole process being finished before the dress rehearsal, which begins after lunch. By then he has plotted the necessary light changes for each separate shot ready for operation from the switchboard during the actual production.

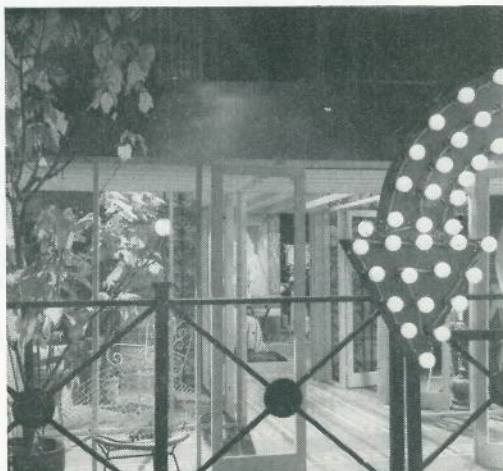
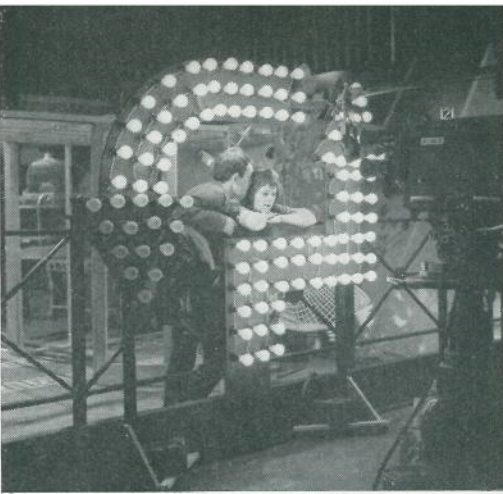


Fig. 6. Camera channels and 217 lighting circuits controlled by two men. (Photo by ABC TV).

Lighting values were as follows: 80 Foot Candles incident key lighting as an average, with the 5K brought up to an incident reading of 100 FC when the camera angles embraced the lamp sign. The principle reason for this was to counter-balance the bright bulbs used to make up the sign, as these were seen in the majority of angles from 1A, 2A and 3A as a foreground subject. It is, of course, easier to counter-balance overall exposure by varying one light source rather than many, and the 5K was reduced to 80 FC incident for the reverse camera angle taken from position 4A. Four 4½ in. Image Orthicon cameras were used for this production and all lenses were set at a stop of f/8 with no filters used in the cameras.

We suspect that many will be surprised at Mr. Campbell's *the various moods of lighting* in the above article. To them a TV picture is a coarse reproduction incapable of any subtle expression. The fault seldom lies in the studio, where one is impressed by the high standard of picture presented on the production suite monitors. The real trouble lies at the home receiving end. Even in the rare instances where the TV set is properly adjusted to give a respectable range of contrast then the absence of a black level in the commercial set makes nonsense of even a simple lighting trick like a blackout. The home TV set has familiarised the public to a visual travesty which parallels the audio travesty booming out of nearly all home radios and which, in a tinny variant now dogs our footsteps everywhere. (Ed.)



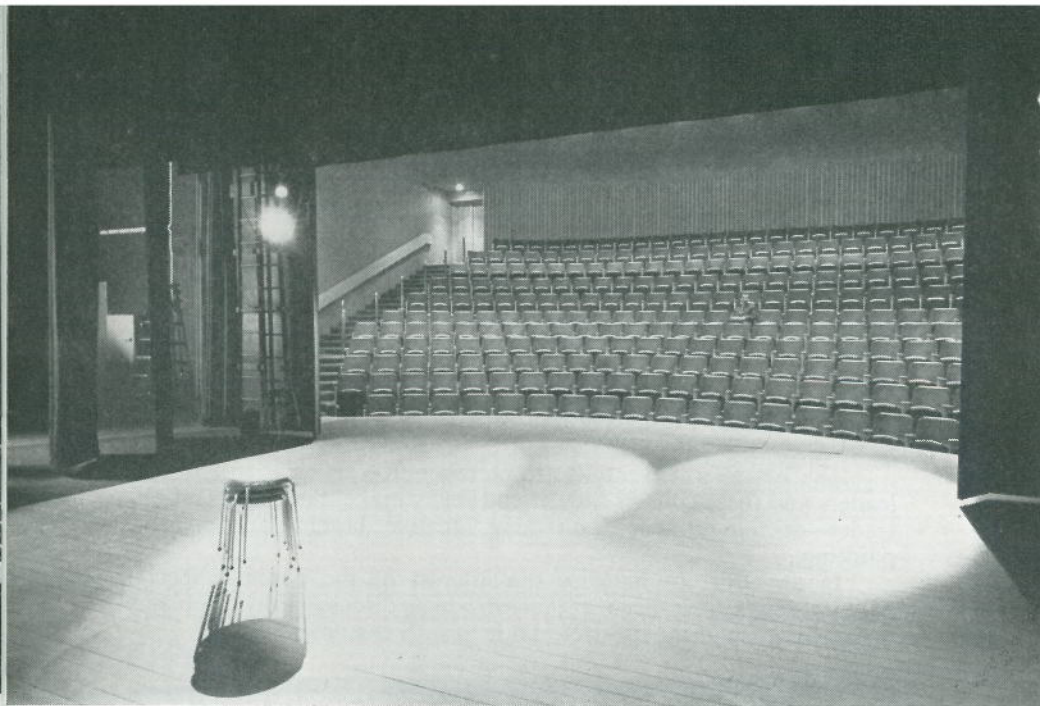
VÅR TEATER

A report on the Stockholm children's theatre movement from our Scandinavian correspondent.

Stockholm's newest and ideal theatre for children and youth, recently opened in the city's model suburb, Färsta. It is said that the planners of Färsta remembered everything—the builders of the theatre certainly remembered everything.

Upon entering the building one walks into a large attractive lobby and thence into the large and equally attractive auditorium built with Swedish wood and equipped with modern lighting fixtures. It seats 296 and the stage opening is $8\frac{1}{2}$ metres wide and $4\frac{1}{2}$ metres high. Several workrooms, dressing rooms and rehearsal rooms are backstage, the largest being 8 by $17\frac{1}{2}$ metres. A large costume collection is stored in closets and a carpentry shop contains every requirement for building sets and props.

Elsa Olenius opened Vår Teater (Our Theatre) in 1942, and this institution is the creation of this one woman. Being a librarian, Elsa Olenius was not seeking to advance the dramatic art, but rather find new methods of increasing children's interest in literature. Her efforts served not only to advance interest in reading among young people, but revealed new insights into young minds and mentality, and slowly it was realised that the children's theatre was a new educational instrument.



The "Var Teater" at Färsta, Stockholm.

In 1955 the Child Welfare Board of Stockholm decided to build several theatres throughout the city, the number built now stands at eight with the ninth to be opened shortly.

It was discovered by the founder, Elsa Olenius, that producing a popular book on the stage did more than increase a desire to read among children. It created a team spirit, thus teaching them to work together, overcome inhibitions and find means of solving personal problems and develop an appreciation for the theatre arts: writing, painting, music, sculpture, dance and design.

Vår Teater—Our Theatre—is really the domain of the young. From immediately after school hours until bedtime—nine or ten at night—these Stockholm youngsters and teenagers will be found working on many different projects which not only gives them great enjoyment and learning—thus continuing school in another form—but is often good theatre.

Stockholm, one of the great modern cities, provides its young with hours filled with undesirable temptations and dangers which are ever-present problems and headaches for parents and the city fathers. The children's theatre provides an ideal outlet for the energy of these young people in search of thrills and excitement—outlets which demand time and create loyalty to the "team".

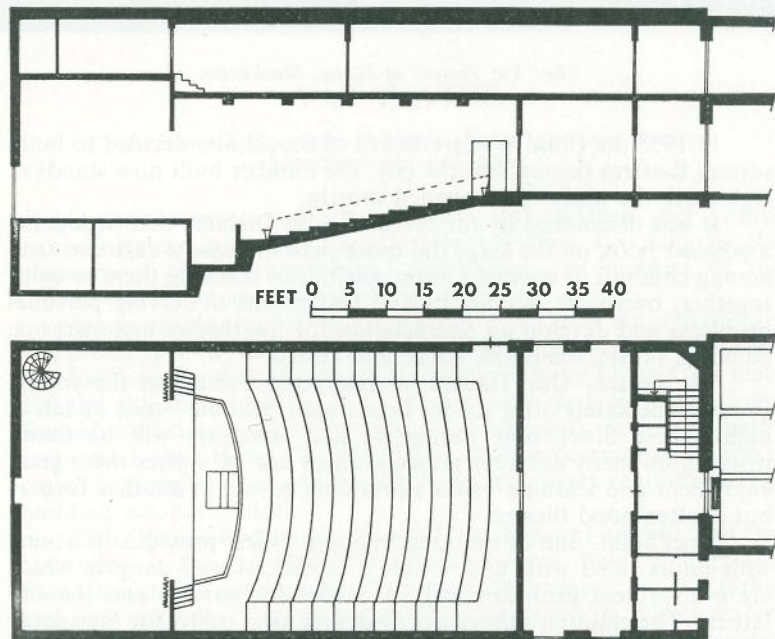
At present 4,000 children and teenagers take part in Vår Teater activities led by sixty leaders. The young people range in age from

seven to twenty and are divided into 270 groups numbering from fifteen to twenty each, and at times there may be as many as thirty groups at one theatre. A performance is presented at each of the eight theatres every week which drew an attendance during this year of 53,000. During the past year seventy-eight plays have been presented and thirty-six are currently being rehearsed.

This staff of sixty leaders are paid by the hour, but immediately above them are the directors of the eight theatres with a supervisor on top as director-in-chief. The leaders, who attend a special training course each year, are required to have a very broad background in many fields of study—education, art and social studies as well as theatre and they must have had experience with children and teenagers.

The best of these pupils are picked out every year to work as leaders and these courses they attend really make them a jack-of-all-trades—sociology, speech, directing, creative dancing and creative painting.

In an effort to increase the interest of the parents, special parent groups have been organised which discuss many problems which come up at the theatres and help with costumes.



Plan of the "Vår Teater" at Hägersten, Stockholm. This theatre seats 180 and is smaller than that at Färsta. The scenery and property space is below-stage and dressing room and wardrobe above-stage. The complete enterprise includes club rooms and a cinema, also with a stage, seating 300.

The theatre entertains no desire to discover a Greta Garbo or an Ingrid Bergman, or even any lesser talent, nor does it set out primarily to entertain an adult audience. The important work is not even a polished final performance of one of these groups. The real value as far as these children are concerned comes from working together, being sensitive to the need of others, developing their imagination and initiative.

Over the past year Vår Teater has sought to raise the cultural interest of the young people by having them take part in dramas written by famous playwrights, including Astrid Lindgren, the famous Swedish author of children's books, who has written plays specially for "Vår Teater".

Each theatre has two groups of jazz ballet and there are film production groups where a practical and theoretical film technique is taught. Some of the theatres have a film studio, which gives a series of five programmes for the age group of seven to twelve.

Dan A. Lipschütz, who succeeded founder Elsa Olenius as supervisor, received his LL.B. from the University of Upsala, his B.A. in theatre history from the University of Stockholm, and his M.A. in theatre from Northwestern University, Chicago, Illinois, U.S.A., where for two years he produced TV-programmes and a Scandinavian radio programme for a Chicago radio station.

The theatre season extends from September to May. Productions vary from fairy tales to serious drama depending on the age level of the audience. The theatres exchange performances which enables members to meet each other and builds a theatre *esprit de corps*. A small membership fee is charged each season which entitles a child to take part in all activities and attend performances at all theatres.

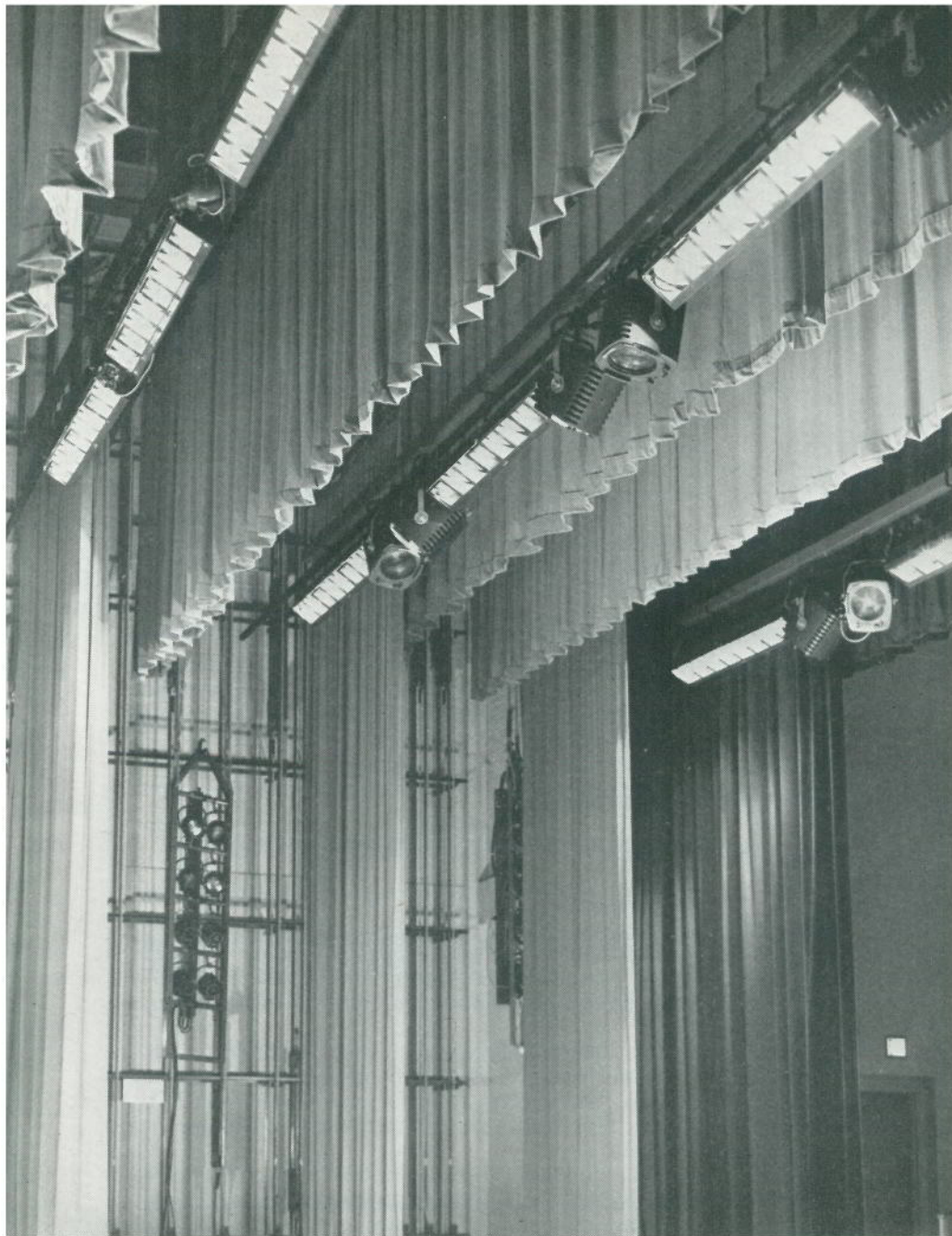
CEDARBRAE SECONDARY SCHOOL

by Philip Rose

Immediately to the east of Metro Toronto is the township of Scarborough, one of the fastest growing areas in Canada. Since the end of the war, the population has grown from 28,444 to 209,898, and over fifty-nine new schools have been built, six of them being high schools.

One of these is Cedarbrae Secondary School, which came into operation in 1961, and when this fall term commences will accommodate 1,810 pupils, taking them from Grade IX to Grade XIII. Students are prepared for University but there are also commercial and technical courses.

The school and grounds cover 15.2 acres and are well located to several residential areas, some well established and others still growing. The school was planned, not only to serve the needs of normal school age students, but also the remainder of the community. This meant provision, not only of a night school programme during the winter, but of an auditorium truly worth the name. It seats



The stage lighting at Cedarbrae.

1,101 on two levels, each one properly raked and stepped to provide an excellent view of the stage from each of the functional, though not uncomfortable, seats. The auditorium is so located that the main entrance to the school serves as an excellent foyer and promenade.

The stage is of the traditional proscenium type with a full-sized orchestra pit. The stage is 87 ft. wide by 30 ft. deep with a proscenium opening of 36 ft. wide by 20 ft. high. There is a curved apron having a maximum depth of 7 ft. with steps at each side giving access to the auditorium. Dressing rooms are provided at each side of the auditorium.

A full-flying grid is installed and, at the moment, sixteen sets of single purchase counterweights are fitted. Plenty of room is available for the addition of further sets, either counterweight or rope as required, a complete wall frame being built to the actors' left wall. The loading platform for the counterweight sets is installed at high level and the hauling ropes are operated at stage level.

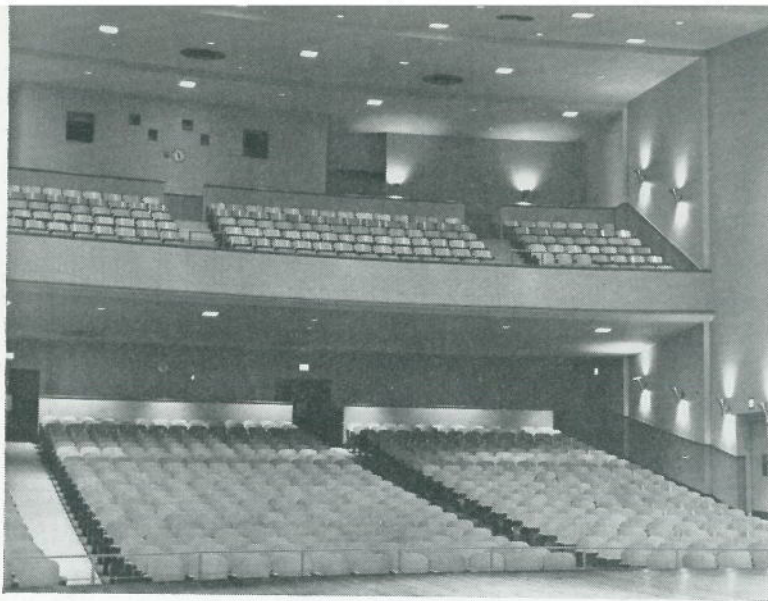
The stage drapery arrangement follows the usual multi-purpose stage layout with three sets of traverse curtains, borders and legs. The curtains can, of course, operate as drop curtains and all the draperies can be flown away in a few minutes. Unfortunately the back wall of the stage is not treated as a solid cyclorama, but counterweight sets are available for a cloth cyclorama and painted cloths.

Although the scale of the auditorium is comparable to a good small professional theatre, it is in fact much better than many such theatres I know on both sides of the Atlantic. It is essentially a multi-purpose building designed to cater for anything from normal daily school activities to visits of professional companies. A good stage dock door is provided and, although it does not open directly to the outside, it has opposite it a similar opening on to a good storage area and this has outside access.

The lighting of the stage, like the stage itself, is essentially multi-purpose, but a fair amount of flexibility has been built into the wiring which permits fairly speedy and easy rearrangement of the lighting equipment.

The auditorium ceiling has a continuous slot from side to side, above which is a good catwalk and along the front are mounted fifteen mirror spots arranged on seven circuits. Interchangeable lenses are provided for these spots so that greater control of the light, for varying application, can be obtained than by simply adjusting the framing shutters. Diffusing glasses are also available for each spotlight.

Footlights are not fitted as standard equipment, although they can be used by cantilevering portable sections over the front of the stage and feeding them from the floor pockets (dips) should they be wanted. I don't think that this is the time or place for me to enter the arena of footlights yea or nay; other "experts" have written yards on the subject!



The auditorium at Cedarbrae School.

The First Borderlight is of the composite type with four sections of three colour magazine borderlight and six 10 in. Pattern 243 Fresnel spotlights on individual circuits. At each end of the borderlight is a 7 ft. 6 in. ladder, each having sixteen baby spots (eight Pattern 23 profile and eight Pattern 123 Fresnel), the profile spots being a mixture of lanterns with built-in framing shutters and those with iris diaphragms.

The Second Borderlight is exactly the same as the First with ladders similar to those at the end of the First Borderlight.

The Third three-colour Borderlight is in four sections with three circuits for effects projectors or back lighting spots.

Two four-gang floor pocket boxes are fitted on each side of the stage with sixteen outlets arranged on eight 2 kW circuits.

The Control System is a Strand System LC Remote Control. It has forty-eight dimmers with one scene preset (a pair of levers) and there are six master dimmers to which the individual channels can be selected as required. Also six straight saturable reactor dimmer circuits are provided; four control the main auditorium decorative lighting and two control mirror spots arranged to frame light the orchestra pit. The orchestra stand lights dimmer is in the orchestra pit and is under the direct control of the conductor.

The auditorium at Cedarbrae may prove a pointer for the future. If live theatre in all its forms, both amateur and professional, is to be available to the public in any but the largest centres of population, then the civic authorities must lead the way. They are of the few who today can afford to build relatively small but well-designed auditoriums, and run them on an economic basis, and this they can do by associating them with a school or other civic building.

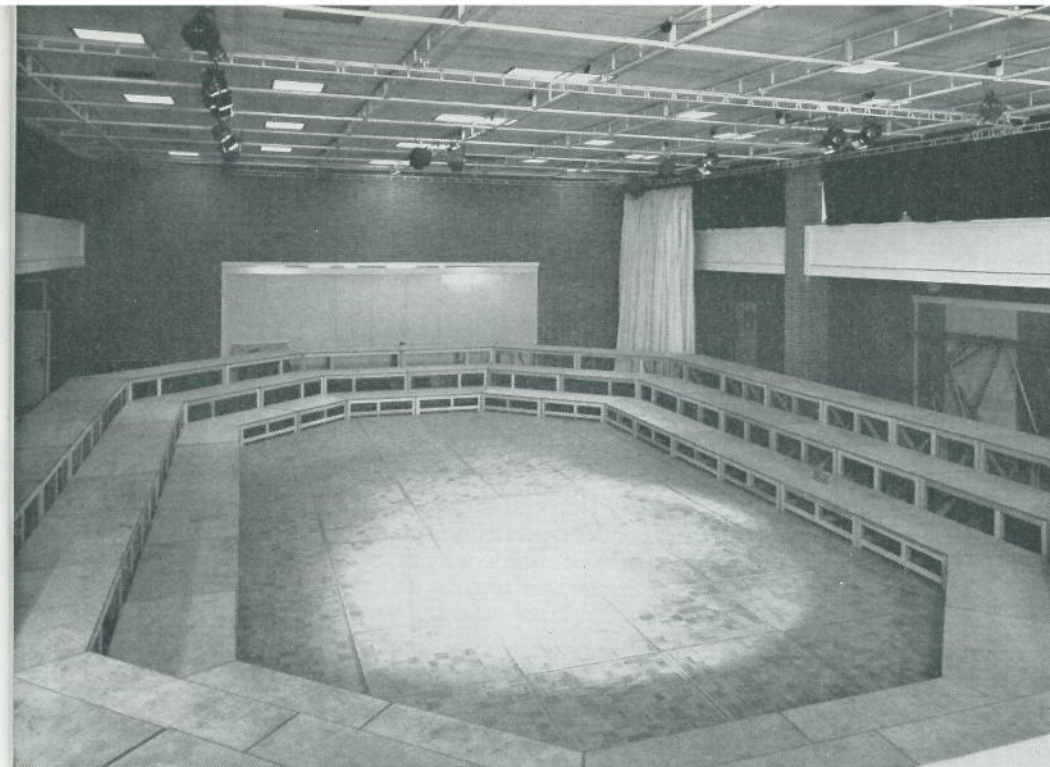


Fig. 1. St. Mary's Twickenham, general view of hall with rostrums to carry the seating set as large arena.

ADAPTABLE THEATRE ST. MARY'S TRAINING COLLEGE TWICKENHAM

The teachers' training college at Twickenham is a Roman Catholic enterprise which consists of Walpole's famous Gothic extravaganza—Strawberry Hill—and a series of new buildings for which Sir Albert Richardson, Houfe and Partners are the architects. The Drama Department's Adaptable theatre which forms one of the new buildings is illustrated in the following pages.

The genius who is responsible for this adaptable theatre is Miss Colette King, the senior drama lecturer at St. Mary's. In its physical realisation she has had the full collaboration of the architects and the technical assistance of Mr. Norman Branson, the architect of the new Questors theatre. Miss King has obviously been fortunate in that the college authorities have backed her very free approach to theatre.

As the plan (Fig. 6) shows, the main area of the hall is roughly 70 ft. \times 42 ft. \times 18 ft. 6 in. high. Outside this, below the clear-story (covered by black curtains in the photographs) there is considerable space on each long side and at each end there is a storage area. That at the south end has a shelf floor over part of its height which forms a production area for the switchboard, etc., with a good view from large windows overlooking the hall. The main area of the room is completely flexible and in this resembles to some extent a television studio. A cyclorama runs on a track right round this area and it can be switched to an intermediate track by a set of points (as in Fig. 4). An overhead 6 ft. square pipe grid allows lighting equipment to be hooked on and clamped anywhere (Fig. 7). The grid can also be used to make-off scenery and drapes, etc. Access is intended to be from the floor by a light ladder which can be hooked to the grid. In the ceiling over there are four traps which can be used to get actors on to high balcony or ladder structures. In other words if one wants to make entrances or exits via the ceiling one can. In contrast most of the floor is covered in 4 ft. removable squares which allows entrances to be contrived anywhere or, by removing the supporting columns, an orchestra pit or something of the sort to be formed.

Fig. 2. Theatre-in-the-round.



Fig. 3. Open stage backed by cyclorama, middle part only drawn taut.

The floor of the room represents stage level and therefore all seating is carried on rostrums. There are some 124 wooden rostrums and the photographs show some of the arrangements possible. Typical seating rostrums are:—

- | | |
|-------------|--|
| (a) 8 units | 5' 0" \times 3' 0" \times 1' 3" high |
| (b) 8 units | 5' 0" \times 3' 0" \times 2' 6" high |
| (c) 8 units | 5' 0" \times 3' 0" \times 3' 9" high |
| (d) 8 units | 4' 6" / 5' 9" \times 3' 0" \times 1' 3" high |
| (e) 8 units | 5' 9" / 7' 0" \times 3' 0" \times 2' 6" high |
| (f) 8 units | 7' 0" / 8' 3" \times 3' 0" \times 3' 9" high |

Rostrums all clamp together with a simple U clamp and there is one row of wooden non-tip-up seats per rostrum. These lock themselves neatly into position except in the case of the top row which uses a special rail. The complete arena (Fig. 1), seats 250 in the three rows. The various rostrum arrangements shown in the photographs were rigged and photographed in a morning by the students who also posed in the case of Figs. 3 and 5.

A proscenium type stage could be contrived with draperies in much the same way as indicated by the placing of the cyclorama as a curtain for Fig. 4. If an orchestra pit were really needed, the auditorium could be placed in the larger "half" of the room instead of

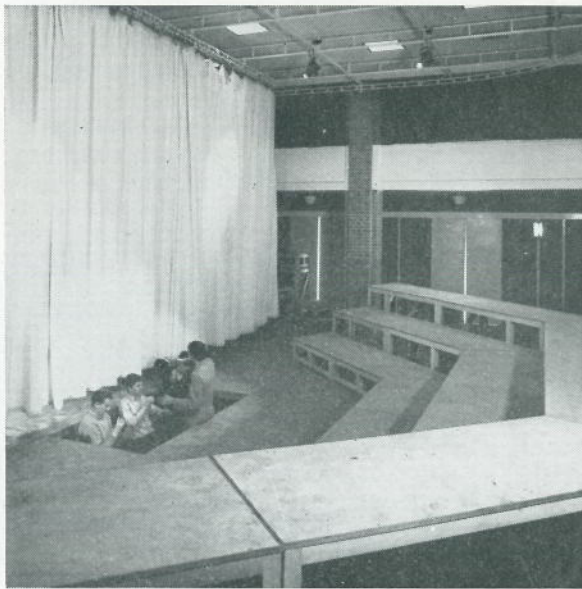


Fig. 4. Proscenium stage.

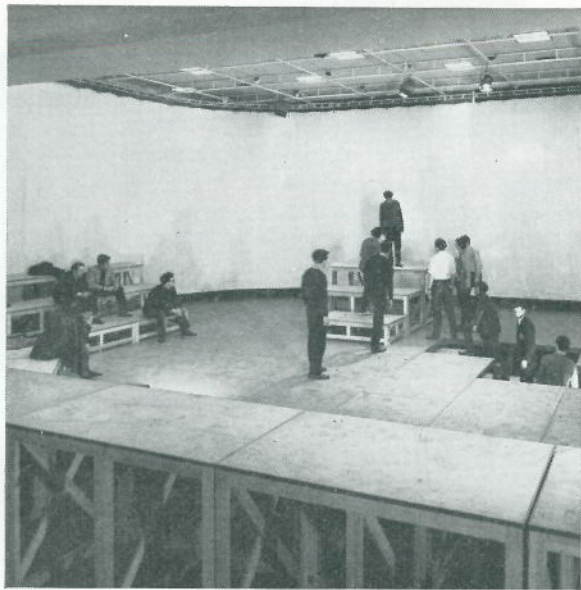
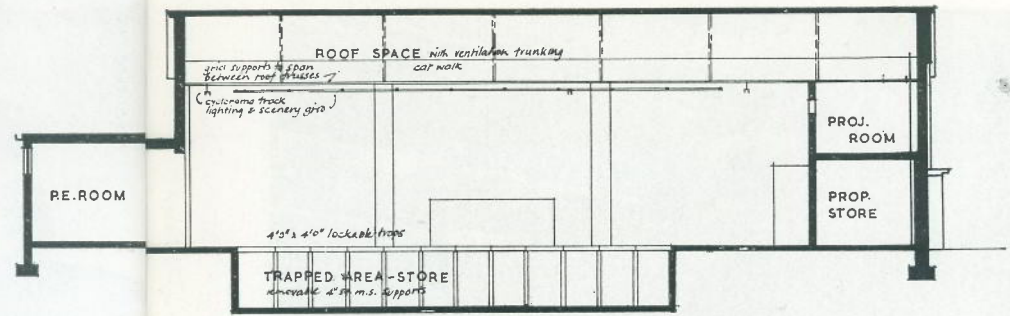
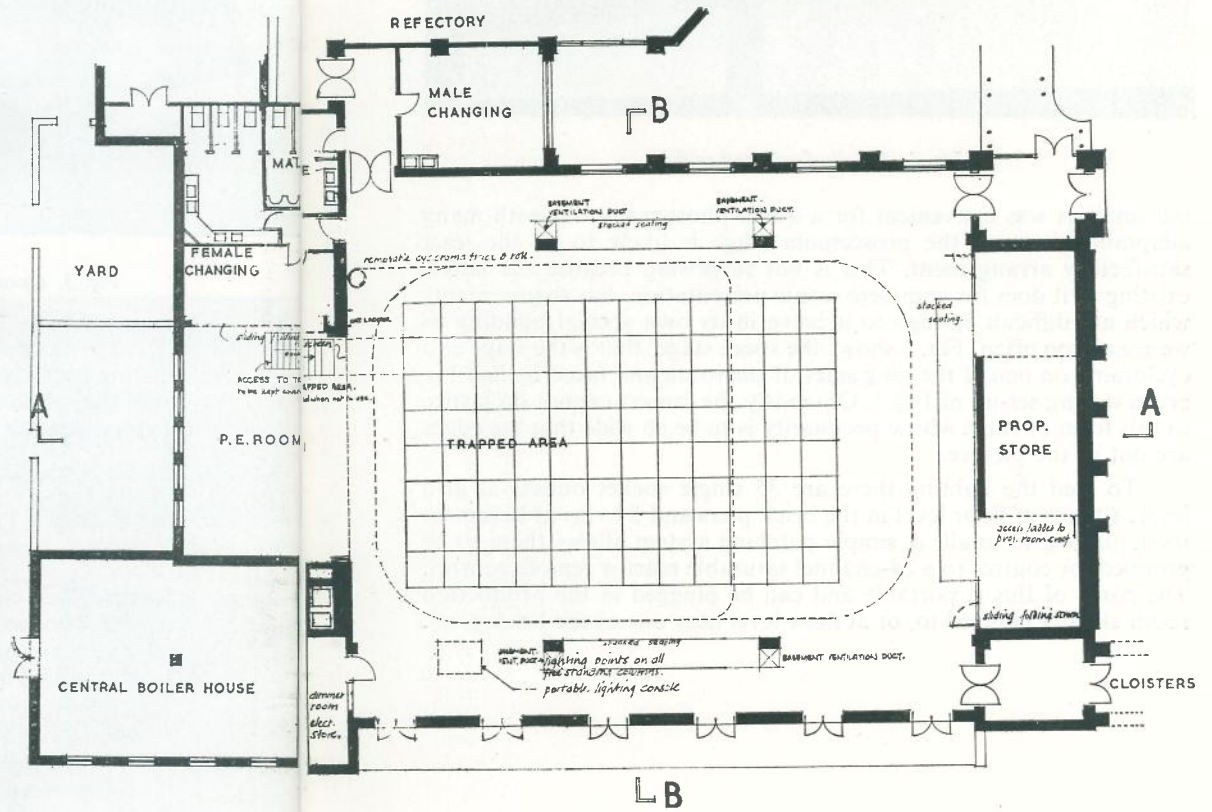


Fig. 5. Part of space stage set on a long side.



SECTION A A



L B

Fig. 6. Plan at floor level and section.



Fig. 7. Detail of grid and ceiling

the small as was convenient for a quick photograph. As with many adaptable theatres, the proscenium stage is likely to be the least satisfactory arrangement. This is not surprising because the latter, existing as it does for complete scenic presentation, has requirements which are difficult enough to achieve in its own special building as we see all too often. Fig. 5 shows the space stage, that is the stage and cyclorama on one of the long sides of the room and faced by half the arena seating set-up of Fig. 1. Obviously the camera cannot do justice to this form of stage whose peculiarity is to be so wide that the edges are out of the picture.

To feed the lighting there are 35 single socket outlets at grid level; 8 twins at floor level in the brick piers and 5 twins at basement level, making 48 in all. A simple patching system allows these to be grouped for control to a 24-channel saturable reactor remote control. The panel of this is portable and can be plugged in the production room already referred to, or at floor level near one of the brick piers.